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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Communications.

FOREIGN BODIES IN THE AIR-PASSAGES.*

A STUDY OF ONE THOUSAND CASES TO DETERMINE THE PROPRIETY OF BRONCHOTOMY IN SUCH CASES.

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One of the evidences of the advancement of surgical science is that its *dicta* no longer emanate from an individual, but are formulated from the united experience of the profession. Every one, therefore, who adds a new fact or assists in classifying those furnished by others aids in their construction and becomes in part responsible for them. This divided responsibility, as well as the respectful hearing which labor alone secures for even the most obscure student, give me the courage to appear before you and question whether one of the accepted rules in surgical practice is correct.

Although Frédéric Monavius in 1644 formally advised tracheotomy for the removal of foreign bodies in the air-passages,† and Verduc and Heister called attention in 1739 to new facts

* Read before the American Surgical Association, in Philadelphia, June 1, 1882. All the tables mentioned are here omitted except Table No. 6, which is a summary of the others. All the tables will appear in full in the Transactions of the Association.

† F. Guyon, Diction. Encyclopedique des Sciences Medicales, art. Larynx, p. 725.

and advised the operation,* and Louis in his celebrated memoir in 1759,* after presenting the facts previously published, declared himself strongly in favor of bronchotomy in such cases, it was not until a much later period that there was a general agreement among surgeons as to the propriety of the operation in cases of this accident. Indeed it was only since the elaborate discussion on Foreign Bodies in the Air-passages by Prof. Gross in 1854 that this was effected.

In the work referred to Prof. Gross says there has been established "the important practical precept to resort to bronchotomy in all cases the moment it is known that there is a foreign substance in the windpipe."†

That this statement is a clear enunciation of an established rule in surgery, may be made evident by a brief examination of some of the leading authorities on the subject.

Prof. Gross, in the work already quoted, in his general summary says, inasmuch as no confidence can be placed in other means, "It follows as a necessary corollary that bronchotomy affords the best chance of relief, and that consequently it should always be resorted to as early as possible, unless there is some special contra-indication."‡ In the last edition of his *Surgery* this opinion is reaffirmed in these words: "Having satisfied himself that the foreign body is in the air-passages, the sooner the windpipe is opened the better."§

Mr. Erichsen says, "If a patient be seen a few hours, days, or weeks after a foreign body has been introduced into the air-passages, or indeed at any period after the accident, and inversion have failed, tracheotomy ought to be performed; and this should be done even though the symptoms be not urgent."||

Mr. A. E. Durham says, "When a foreign body is known to be retained in some part or other of the air-passages, the promptest treatment is demanded. The surgeon should not trust to the unaided efforts of nature to expel the extraneous substance. As

* F. Guyon, *Diction. Encyclopedique des Sciences Medicales*, art. *Larynx*, p. 698.

† A Practical Treatise on Foreign Bodies in the Air-passages, p. 229.

‡ *Id.* p. 458. § *Prin. and Prac. of Surgery* (ed. 1878), vol. 2, p. 409.

|| *Science and Art of Surgery* (Amer. ed. 1869), p. 388.

a general rule, the windpipe should be opened with as little delay as possible in every case in which a foreign body is certainly known to be retained in any part of the air-passages." *

Mr. T. Holmes says, "When the diagnosis of a foreign body has been made, the surgeon should allow no delay in removing it at once." †

Says Mr. Bryant, "Given the diagnosis of a foreign body in the windpipe, the duty of the surgeon plainly is to endeavor to remove it. There should be no deviation from this rule. The surgeon should never allow himself to be misled by the mildness of the symptoms, nor by the knowledge that in rare instances foreign bodies have remained in the passage for years and even then expelled, as such cases are exceptional. The accident is one that will inevitably destroy life, although it must be doubtful at what time or in what form danger may appear." ‡

Opinions similar to the above might be easily multiplied, but to add to them would be a needless repetition, as they are sufficient to establish the proposition that it is at present a doctrine in surgery that, as a general rule, the certainty of the presence of a foreign body in the air-passages makes bronchotomy necessary.

Prof. Gross observes that "no man, however old or however great his opportunities for observation, can possibly have much experience in this branch of surgery.§ It therefore follows as a necessary consequence that the rule given rests chiefly on the collective experience that has from time to time been assembled in statistical tables, the most complete and authoritative of which are those of Prof. Gross and Mr. Durham. These tables certainly seem to afford a sufficient basis on which to rest the conclusion that in cases of foreign bodies in the air-passages bronchotomy offers a far better chance of recovery than waiting for spontaneous expulsion. A brief examination of the tables in question will make this apparent. Prof. Gross's tables|| contain

* Holmes's System of Surgery (Amer. ed.), vol. 1, p. 710.

† Treatise on Surg., its Prin. and Prac., p. 211.

‡ Practice of Surg., p. 562.

§ Foreign Bodies in Air-passages, p. viii.

|| Foreign Bodies in the Air-passages.

the particulars of eighty-five cases of the accident not subjected to bronchotomy. Of these, fifty-six, or 65.76 per cent, recovered (including three cases of expulsion by use of emetics and four by inversion of the body), and twenty-nine, or 34.11 per cent, died (including eight cases of death after spontaneous expulsion).

Bronchotomy was practiced in ninety-eight cases, eighty-three, or 84.69 per cent, recovered, and fifteen, or 15.30 per cent, died.

Mr. Durham reports* two hundred and seventy-one cases without operation; one hundred and fifty-six recovered, or 57.5 per cent; one hundred and fifteen died, or 42.5 per cent. Cases operated on, two hundred and eighty-three; recovered, two hundred and thirteen, or 75.2 per cent; seventy died, or 24.8 per cent. Among the cases of Mr. Durham reported as recovering after operation, are three cases of direct extraction, and twelve by inversion of the body and succession. These should be excluded in estimating the chances of recovery with and without the operation. Doing this there remain two hundred and sixty-eight cases subjected to bronchotomy; one hundred and ninety-eight recovered, 73.88 per cent, and seventy died, or 26.11 per cent.

Mr. Durham, in another table,† reports one hundred and sixty-seven cases of tracheotomy for foreign bodies in the air-passages. Of these, one hundred and thirty recovered, or 77.85 per cent; thirty-seven died, or 22.15 per cent. Adding the cases of Prof. Gross to those of Mr. Durham, the result is a total of seven hundred and twenty-two cases; three hundred and fifty-six without operation, and two hundred and twelve recoveries, or 59.55 per cent—one hundred and forty-four deaths, or 40.49 per cent. With operation three hundred and sixty-six, two hundred and eighty-one recovered, or 76.77 per cent, and eighty-five died, or 23.22 per cent—a difference of 17.22 per cent in favor of operation.

In 1867 I collected and published‡ the particulars in relation

* Holmes's System of Surgery, vol. I (Amer. ed.), pp. 709-10.

† *Id.* p. 714.

‡ Trans. Indiana State Med. Soc. 1867.

to one hundred and sixty-three cases of foreign bodies in air-passages. The results of these cases were so greatly at variance with reports of a similar kind previously published that I was led on the advice of Prof. Gross to continue the collection of cases. Accordingly, in 1879 I issued a circular to the profession asking for a report of cases. This circular was extensively distributed throughout the United States and Europe, and met with a liberal response; and the cases reported, together with a small number collected from medical journals, make an aggregate of one thousand. The particulars in relation to these cases may be found in the accompanying tables. The chief value of the tables, perhaps, arises from the fact that it is only possible for a small number of the cases to have ever been used in a statistical inquiry, as eight hundred and ninety-seven are reported as never having been published.* A large amount, therefore, of new material is presented for use in determining the validity of the surgical rule previously given in cases of foreign bodies in the air-passages.

As table No. 6, which is a summary of those preceding it, contains in a compact form all the facts important for statistical purposes, it would be a needless repetition to reproduce other than the leading ones here. In sixty-three cases the foreign body was removed by operative measures other than bronchotomy—e. g. with forceps, with or without the aid of the laryngoscope, etc. These are excluded in calculating the chances of recovery afforded by bronchotomy, compared with those following the plan of non-interference. There remain nine hundred and thirty-seven cases; of these, five hundred and ninety-nine were not subjected to bronchotomy; four hundred and sixty recovered, or 76.79 per cent; one hundred and thirty-nine died, or 23.20 per cent.

Bronchotomy was performed in three hundred and thirty-eight cases, with two hundred and forty-five recoveries, or 72.48 per cent; ninety-three patients died, or 27.42 per cent—a dif-

*The cases collected from original sources and reported to me as unpublished, contained in my report to the Indiana State Med. Soc. in 1867, I here report as unpublished, as this is but a continuation of that work.

ference in favor of non-interference of 4.31 per cent. In cases without operation these tables show 11.03 per cent more recoveries than do those of Prof. Gross, and 19.29 per cent than those of Mr. Durham, and 7.24 per cent than the aggregate of the cases of Prof. Gross and Mr. Durham. In the cases in which bronchotomy was performed, the tables show 12.21 per cent less recoveries than those of Prof. Gross, 1.40 per cent less than those of Mr. Durham, and 4.29 per cent less than the united cases of these gentlemen. Combining the cases here reported with those of Prof. Gross and Mr. Durham, the result is a total of nine hundred and fifty-five cases without operation, of which two hundred and eighty-three, or 29.78 per cent, died. The sources named furnish a total of seven hundred and nineteen bronchotomies, with one hundred and seventy-eight deaths, or 24.75 per cent. As a result of this study of one thousand six hundred and seventy-four cases, it appears that without operation there is one death in 3.5 cases, and one in four after bronchotomy.

The cases of laryngotomy, reported by Prof. Gross, give 76.52 per cent of recoveries, and 23.50 per cent of deaths; cases of laryngo-tracheotomy, 76.92 per cent of recoveries and 23.8 per cent of deaths; and the cases of tracheotomy, 88.23 per cent of recoveries and 11.76 per cent of deaths.

Mr. Durham reports 76.52 per cent of recoveries after laryngotomy, and 23.50 per cent of deaths; 75 per cent of recoveries after laryngo-tracheotomy, and 25 per cent of deaths; and 73.59 per cent of recoveries after tracheotomy, and 26.40 per cent of deaths. In the tables appended, thirty-six cases of laryngotomy give thirty recoveries, or 83.33 per cent, and six deaths, or 16.66 per cent; twenty-six cases of laryngo-tracheotomy give nineteen recoveries, or 73.07 per cent, and seven deaths, or 26.93 per cent; and two hundred and seventy-six cases of tracheotomy give one hundred and ninety-six recoveries, or 71.02 per cent, and eighty deaths, or 28.98 per cent. The tables of Prof. Gross, Mr. Durham, and my own give seventy cases of laryngotomy, with fifty-six recoveries, or 80 per cent, and fourteen deaths, or 20 per cent; fifty-nine cases of laryngo-tracheotomy, with forty-

four recoveries, or 74.57 per cent, and fifteen deaths, or 25.42 per cent; and six hundred and five cases of tracheotomy, with four hundred and forty-nine recoveries, or 74.21 per cent, and one hundred and fifty-six deaths, or 25.78 per cent.

It appears from this calculation that after laryngotomy for foreign bodies in the air-passages, one patient in five dies; and after laryngo-tracheotomy and tracheotomy, one in four dies.

Although this study of the combined tables yields results slightly different from those furnished by my own—being a little more favorable for bronchotomy—the difference is too slight to furnish an argument in support of the existing surgical rule. This becomes apparent when the cases here presented are examined alone.

If table No. 6 is examined, the fact will be disclosed that a study of the new material presented does not tend to establish the correctness of the opinion that the presence simply of a foreign body in the air-passages determines the necessity of bronchotomy.

The foreign body that most frequently finds a lodgment in the air-passages is a grain of corn (*maize*), one hundred and seventy-seven examples are here presented. In these cases spontaneous expulsion followed by recovery occurred in sixty-six, or 71.74 per cent. There was a fatal result in twenty-six, or 28.26 per cent, cases without operation. Bronchotomy was practiced in eighty-five; sixty-six recovered, or 77.64 per cent, and nineteen died, or 22.36 per cent.

In one hundred and nine cases a watermelon-seed (*Cucumis citrullus*) was the extraneous substance. Of the seventy-five cases without operation, seventy, or 93.33 per cent, recovered, and five, or 6.66 per cent died; and of the thirty-four cases in which bronchotomy was practiced, twenty-six, or 76.47 per cent recovered, and eight, or 23.53 per cent, died—a death-rate 16.87 per cent greater than in the cases without operation.

In ninety cases the foreign substance was a bean. Of fifty-one cases without operation, thirty, or 58.82 per cent, recovered, and twenty-one, or 41.17 per cent, died. Bronchotomy was

performed in thirty-nine cases; twenty-four, or 61.54 per cent, recovered, and fifteen, or 38.46 per cent, died—a mortality 2.71 per cent more favorable than in the cases without operation.

In fifty-nine cases a grain of coffee was lodged in the air-passages. Of the thirty-four cases without operation, twenty-nine, or 85.29 per cent, recovered, and five, or 14.71 per cent, died. Of the twenty-five cases operated on, fourteen, or 56 per cent, recovered, and eleven, or 44 per cent, died—a death-rate 29.29 per cent greater than in the cases without bronchotomy.

Under the head of "seeds of various kinds" are found ninety-four cases; fifty-eight without operation, and forty-seven, or 81.03 per cent, recoveries, and eleven, or 18.96 per cent, deaths. In thirty-six cases operated on, there were twenty-seven, or 75 per cent, recoveries, and nine, or 25 per cent, deaths, or 7.04 per cent more than in the cases without operation.

In three hundred and seventy-one cases in which the foreign body comes under the head "miscellaneous," two hundred and sixty-three cases were without operation; of these, one hundred and ninety-nine, or 75.67 per cent, recovered, and sixty-four, or 24.33 per cent, died. In one hundred and eight cases of bronchotomy, there were seventy-seven, or 71.29 per cent, recoveries, and thirty-one, or 28.71 per cent, deaths—a number 4.38 per cent greater than in the cases without operation.

In presenting these facts, I am not seeking to bring bronchotomy into discredit in cases of foreign bodies in the air-passages. In a large number of cases the larynx or the trachea must be opened to save life, and the surgeon who fails to urge the necessity of prompt operation will be neglectful of his duty. I am only striving to show that the present accepted rule is too broad; that in many cases when it is certainly known that the trachea or bronchia contains a foreign body, the patient will be more likely to recover if trusted to the chance of spontaneous expulsion, than he will if subjected to operation. If this teaching be accepted, it will be important to determine in what cases bronchotomy should be performed and in what cases avoided. The cases presented will offer some assistance in the solution of

the question. When the nature of the foreign body is known, the propriety of an operation can be more easily determined than when it is not, as it is apparently settled that certain substances are much more likely to be expelled spontaneously than others.

Among the great variety of substances that sometimes find a lodgment in the air-passages, watermelon-seeds, after grains of corn, are the most frequent; yet the tables show that in the cases in which a watermelon-seed was the foreign substance, there was spontaneous expulsion and recovery in 93.33 per cent, or 16.86 per cent more than in the cases subjected to bronchotomy. When the accident was the result of the introduction of a grain of coffee, the cases trusted to the efforts of nature gave 29.29 per cent more recoveries than in the cases in which bronchotomy was performed.

And in the cases in which seeds of different kinds and miscellaneous substances found a lodgment in the air-passages, a percentage is found in favor of non-interference. The deduction from these facts is, that when the foreign body is one of the kind mentioned, nature will effect more cures than the surgeon. This is the general deduction, but cases will frequently occur in which an operation is imperatively demanded, whatever the foreign substance may be. The conditions demanding a variation from the general rule will be noticed presently.

When the foreign body is impacted in one of the bronchia, the chances of expulsion at the time of operation are small, and attempts at extraction by instruments generally end in failure. Ninety-three deaths are reported after bronchotomy in these tables. In seventy-three cases, or 78.38 per cent, the foreign body was not removed. It is probable that in a large number of these cases the foreign body was impacted in one of the bronchia. It is evident, therefore, that an operation undertaken in such a condition offers but little chance of success. No argument is needed to prove that when a foreign body is so impacted in the trachea or one of the bronchia as to make its removal impossible, the addition of a serious wound of the larynx or trachea must add to the patient's danger; yet one source of increased danger may be mentioned.

In cases where the foreign body is not removed after tracheotomy, death from pneumonia is more likely to occur than in cases without operation. In the cases of death after operation and without the removal of the foreign body, pneumonia is put down as the cause in 30.13 per cent, while the same disease caused death in only 18.70 per cent of the fatal cases without operation and without the removal of the foreign body—a difference of 11.43 per cent. It is a legitimate inference in cases of impaction of the kind described, that the chances of life are diminished by bronchotomy. It is admitted that in many cases of impaction the wound in the windpipe has been kept open and the foreign body expelled after a considerable period of time, but there is an equal number of cases in which no operation was performed, and the same fortunate result occurred. In five cases reported in the tables, tracheotomy was performed, and several months after the closure of the wound the foreign body was spontaneously expelled. In these cases the danger of a serious operation was added to that which arose from the presence of the foreign body. These patients survived, but how many of the seventy-three patients reported as dying after operation, and without expulsion of the foreign body succumbed because of the operation, is a question that never will be answered. In a number of cases an operation was strongly advised, but declined, and recovery followed spontaneous expulsion. In two cases an operation was actually commenced, but abandoned because of hemorrhage, yet the patient recovered.

In many cases the foreign body—after the first paroxysm of strangulation has passed—causes but little if any trouble, even when it remains for a long period. While we can not be certain that these patients are ever free from danger while the foreign body is retained, it can be said, basing the assertion upon the results here presented, that non-interference affords a better chance of recovery than bronchotomy.

When non-interference is spoken of, I refer to the operation of bronchotomy. In some cases the foreign body may be removed by other means; forceps may be used. The laryngoscope

in certain instances will enable the surgeon to use this instrument with precision and success. In every case that offers a reasonable prospect of success, an effort at direct extraction should be made. The ninety-three cases here reported in which the foreign body was thus removed are evidence that success may sometimes be expected.

Although cases are reported in these tables in which expulsion of a foreign body was effected during the acts of sneezing or vomiting, my investigations do not lead me to hold errhines and emetics in higher esteem than do most surgeons of the present day. Indeed, it is my conviction that they should never be employed. In regard to inversion of the body and succussion, I hold the same opinion expressed in relation to the use of emetics. Although success sometimes attends their employment, as shown by the twenty-six cases here reported, the danger of causing immediate death is so great as to overshadow the occasional success reported. I am therefore fully in accord with the surgeons who teach that these means should never be employed, unless the surgeon is ready to open the windpipe at once should an emergency occur. It would be a still better teaching, I believe, to say that these methods should *never* be resorted to until after an opening into the windpipe has been made.

These observations, in relation to other means than bronchotomy for the removal of foreign bodies from the air-passages, are hardly relevant to the subject under consideration. Their importance, however, permits their introduction here.

Having attempted to show why bronchotomy should not be resorted to in many cases where an extraneous substance has been introduced into the air-passages, it remains to notice the cases in which a resort should be had to the knife. It very rarely happens that a surgeon sees a case of this accident during the paroxysm of strangulation that immediately follows the introduction of a foreign body into the air-passages. The question of operation is usually presented at a later period.

Whenever the symptoms continue urgent, or attacks of

threatening suffocation come on frequently, bronchotomy should be resorted to without unnecessary delay, provided that direct extraction is not practicable. When threatening symptoms are continuous, it will generally be found that the foreign body is lodged in the larynx, and causing signs of rapid strangulation by reflex action, or a constantly-increasing embarrassment of respiration by stenosis depending on edema, or active inflammation. In such cases the sooner an operation is performed the better. Of the two conditions mentioned as causing constant serious symptoms, the second is the most dangerous, although there may be no paroxysms of strangulation after the first. In such cases there can hardly be a hope of spontaneous expulsion. I have lately seen a child die in this way. While the child was at play with a piece of dried apple in its mouth, a sudden fit of strangulation came on that lasted only for a short time. An hour afterward, when I saw the child, there was no distress, and no symptoms indicating a serious accident beyond a slight embarrassment of respiration and huskiness of the voice. I advised that no operation be performed before the advent of other symptoms. No more paroxysms of strangulation appeared, but the difficulty of respiration slowly increased for two days. Then bronchotomy was proposed, but declined. The symptoms steadily grew worse, and the patient slowly died from asphyxia at the end of the fourth day after the accident. On examination after death, a small, thin piece of the coriaceous seed-envelop of an apple was found in the right ventricle of the larynx. The mucous membrane of the larynx and the tissues beneath were highly edematous. While it is hardly possible that this foreign body could have been directly removed by an operation—its discovery even at the autopsy being difficult, owing to its color, small size, and position—life might have been prolonged by an opening below the seat of obstruction, and a chance been thus gained of spontaneous expulsion at a later period.

A similar condition of the larynx may be present even when the foreign body is lodged in the trachea or bronchia. I saw an excellent example of this kind while writing these pages.

A boy four years old, while playing with grains of corn (maize) in his mouth, suddenly strangled. The urgent symptoms lasted for some time. After they had subsided, the child was brought a distance of several miles to me. When I saw him, the respiration was not greatly embarrassed. The grain of corn was evidently lodged in the right bronchus. I advised delay, and heard no more of the case for three days. Then I was sent for, and found the conditions greatly changed. The foreign body still remained in the bronchus, interfering much with the passage of air into the right lung. All the signs of slow asphyxia were present depending on obstruction in the larynx. No paroxysm of strangulation had occurred since the first. I made the operation of laryngo-tracheotomy without further delay. The grain of corn was not dislodged from its position. An instrument was passed through the wound into the mouth, on the supposition that a second grain of corn might be in the larynx. None was found. After the operation the respiration was free and easy. The wound was kept open, and twenty-four hours after the operation the foreign body escaped through the wound. Several days elapsed before the obstruction in the larynx passed away. The cause of this stenosis I do not know. It may have been the introduction of the father's finger into the throat to provoke vomiting at the time of the accident. However produced, it was this condition that made the operation absolutely necessary, and not the grain of corn impacted in the bronchus.

When the foreign body is loose in the trachea, its movements cause frequent attacks of strangulation. In such a case bronchotomy is demanded, not only to afford present relief, but to obviate the great danger of sudden death from a lodgment of the extraneous body in the rima glottidis.

I am aware that statistical evidence is not always reliable; that in surgical practice it can do no more than indicate in any given case what is probably the correct course of action. But as the surgical rule here examined has been established on this kind of evidence, it is surely admissable to ask for a reconsideration of the matter, in order that new testimony of the same

character may be introduced and have its proper influence in determining if the old decision shall be reaffirmed or reversed.

The Fellows of this Association will place, I am sure, a correct value on the new material here presented, and if they are convinced that in these investigations I have sought only the truth, I shall be rewarded for the no small amount of labor expended in collecting and arranging the cases reported in these tables—cases that in my opinion justify the following conclusions, viz:

1. When a foreign body is lodged either in the larynx, trachea, or bronchia, the use of emetics, errhines, or similar means should not be employed, as they increase the sufferings of the patient and do not increase his chances of recovery.

2. Inversion of the body and succussion are dangerous, and should not be practiced unless the windpipe has been previously opened.

3. The presence simply of a foreign body in the larynx, trachea, or bronchia does not make bronchotomy necessary.

4. While a foreign body causes no dangerous symptoms, bronchotomy should not be performed.

5. While a foreign body remains fixed in the trachea or bronchia, as a general rule bronchotomy should not be practiced.

6. When symptoms of suffocation are present or occur at frequent intervals, bronchotomy should be resorted to without delay.

7. When the foreign body is lodged in the larynx, there being no paroxysms of strangulation, but an increasing difficulty of respiration from edema or inflammation, bronchotomy is demanded.

8. When the foreign body is movable in the trachea, and excites frequent attacks of strangulation, bronchotomy should be performed.

FOREIGN BODIES IN THE AIR-PASSAGES. Table No. 6.

CASES.—WITHOUT OPERATION.	No. AND SEX.		RECOVERIES & D'THS.			AGES OF PATIENTS RECOVERED.										AGES OF PATIENTS.—DEATHS.									
	Total No.	Male.	Female.	Recov-eries.	Deaths.	Per Cent of Recov-eries.	Per Cent of Deaths.	Under 1 Year.	1 to 2 Years.	2 to 3 Years.	3 to 4 Years.	4 to 5 Years.	5 to 10 Years.	Over 10 Years.	Under 1 Year.	1 to 2 Years.	2 to 3 Years.	3 to 4 Years.	4 to 5 Years.	5 to 10 Years.	Over 10 Years.				
Total No. of Cases	599	375	224	460	139	76.79	23.20	10	52	45	45	34	124	150	7	30	24	15	23	28					
Grains of Corn	92	60	32	66	26	71.74	28.26	2	9	9	6	9	19	12	3	5	7	2	4	0					
Watermelon Seeds	75	39	36	70	5	93.33	6.66	2	7	7	13	4	21	12	0	0	0	1	1	1					
Beans	51	29	22	30	21	58.82	41.17	2	1	3	5	4	15	2	0	6	1	3	1	1					
Grains of Coffee	34	20	14	29	5	85.29	14.71	2	0	5	6	1	6	2	0	1	1	1	0	0					
Seeds, various kinds	27	31	8	19	7	81.03	18.96	1	0	5	7	2	13	11	1	2	1	1	0	0					
Cockleburrs	26	18	8	19	7	73.08	26.92	1	0	5	7	2	13	14	1	0	4	0	0	0					
Miscellaneous	263	182	81	199	64	75.67	24.33	3	20	12	7	14	46	97	3	13	4	7	12	19					

CASES. WITH OPERATION.	No. AND SEX.		RECOVERIES & D'THS.		AGES OF PATIENTS RECOVERED.										AGES OF PATIENTS.—DEATHS.										LARYNGOTOMY.		
	Total No.	Male.	Female.	Deaths.	Per Cent of Recov-eries.	Per Cent Deaths.	Under 1 Year.	1 to 2 Years.	2 to 3 Years.	3 to 4 Years.	4 to 5 Years.	5 to 10 Years.	Years Over 10	Under 1 Year.	1 to 2 Years.	2 to 3 Years.	3 to 4 Years.	4 to 5 Years.	5 to 10 Years.	Years Over 10	Total.	Rec'd red	Died.	Rec'd of cases.			
Total No. of Cases	338	192	142	245	93	72.48	27.42	12	40	35	22	16	68	43	12	31	15	8	9	14	36	9	6	83.3			
Grains of Corn	85	53	31	66	19	77.64	22.36	6	13	10	8	0	13	8	2	7	3	1	3	4	9	6	1	88.8			
Watermelon Seeds	34	20	14	26	8	76.47	23.53	0	8	6	2	0	5	2	0	3	0	0	1	0	9	6	0	100			
Beans	39	17	22	24	15	61.54	38.46	0	3	5	5	1	0	4	0	0	3	2	2	0	9	6	0	100			
Grains of Coffee	25	13	12	14	11	56.00	44.00	5	5	0	0	0	0	0	0	0	0	0	0	0	9	6	0	100			
Seeds, various kinds	36	26	9	27	9	75.00	25.00	1	0	0	0	0	0	0	0	0	0	0	0	4	9	2	0	100			
Cockleburrs	11	7	4	11	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	3	0	100			
Miscellaneous	108	56	50	77	31	71.29	28.71	0	11	8	4	4	29	16	5	9	6	1	5	4	31	11	3	97.2			

Sex not stated, 4.

Age not stated, 9.

REMOVED BY OPERATION OTHER THAN BRONCHOTOMY.	No. AND SEX.		RECOV. AND DEATHS.		How Soon						
	Total No.	Male.	Female.	Recovered.	Died.	Under 1 Day.	1 to 2 Days.	2 to 3 Days.	3 to 4 Days.	4 to 5 Days.	Days.
	63	40	23	62	1	39	7	4	2	0	0

Not s

Table No. 6. Summary of Tables Nos. 1, 2, 3, 4, and 5.

PERIOD OF EXPULSION.	HOW EXPELLED																	CAUSE OF DEATH.						PUB. OR NOT.		
	Over 1 Month.	3 to 4 Weeks.	2 to 3 Weeks.	1 to 2 Weeks.	6 to 7 Days.	5 to 6 Days.	4 to 5 Days.	3 to 4 Days.	2 to 3 Days.	1 to 2 Days.	Under 1 Day.	Not Stated.	Body Inverted.	By Fall.	Sneezing.	Vomiting.	Coughing.	Asphyxia.	Pneumonia.	Bronch-Pneu.	Abscess.	Laryngitis.	Exhaustion.	Consumpt'n.	Published.	Not Published.
Over 10 Years.	28	0	0	1	8	19																				
5 to 10 Years.	23	4	1	2	1	1	1	1	1	1	1															
4 to 5 Years.	12	5	0	1	0	0	0	9																		

LARYNGOTOMY.	LARYNGO-TRACHEOTOMY.										F'GN BODY R'VD OR NOT.		CAUSE OF DEATH.					VOICE LOST OR IMP'RD.		PUB. OR NOT.	
	Rec'd	Per Cent of Deaths.	Per Cent of Rec'd	Total.	Rec'd	Per Cent of Deaths.	Per Cent of Rec'd	Total.	Rec'd	Per Cent of Deaths.	Per Cent of Rec'd	Total.	Other Causes.	Pneumonia.	Exhaustion.	Hemorrhage.	Asphyxia.	Lost.	Impaired.	Published.	Not Published.
Rec'd	30	33	16	26	19	73	26	276	196	80	71	28	19	32	15	8	19	5	19	71	267
Per Cent of Deaths.	88	100	11	4	3	75	25	75	57	18	76	24	19	32	4	3	1	1	2	11	74
Per Cent of Rec'd	88	100	11	4	3	75	25	75	57	18	76	24	19	32	4	3	1	1	2	7	27
Died.	9	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	33
Rec'd	30	33	16	26	19	73	26	276	196	80	71	28	19	32	15	8	19	5	19	71	267
Per Cent of Deaths.	88	100	11	4	3	75	25	75	57	18	76	24	19	32	4	3	1	1	2	11	74
Per Cent of Rec'd	88	100	11	4	3	75	25	75	57	18	76	24	19	32	4	3	1	1	2	7	27
Died.	9	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	33

HOW SOON REMOVED.										HOW REMOVED.					WHERE LOCATED.		PUB. OR NOT.	
Over 1 Month.	3 to 4 Weeks.	2 to 3 Weeks.	1 to 2 Weeks.	6 to 7 Days.	4 to 5 Days.	3 to 4 Days.	2 to 3 Days.	1 to 2 Days.	Over 1 Month.	Forceps.	Probing.	Wire Hook.	Finger.	Larynx.	Trachea.	Not Stated.	Published.	Not Published.
2	1	0	3	1	0	0	0	0	28	20	2	3	8	39	3	21	5	58
Not stated, 4									Not stated, 2									

Total No. Cases Not Published, 897
Total No. Cases Published, 103
Grand Total, 1,000



TREATMENT OF FRACTURES OF THE SKULL, RECENT
AND CHRONIC, WITH DEPRESSION.*

BY MOSES GUNN, M.D.

The subject expressed in the title of this paper was assigned me by the venerable President of this Association at our last annual meeting. The question which it involves is one of treatment only in cases of depressed cranial bones, and turns entirely upon the management of the depressed portion; for there can be no question as to the general treatment of the patient, nor of the wound of the scalp when such wound complicates the case. As to the method of treating the depressed portion, however, there may well be great diversity of opinion, and the object of this paper is simply to introduce the subject for discussion by giving my own views and my reasons for those views.

I have chosen this way of meeting the question rather than the more laborious and oftentimes unsatisfactory one afforded by opening a correspondence with individual surgeons of the country for the purpose of obtaining the results of their personal experience, and it is quite probable that the sentiments which I shall advance may not meet with general approval; perhaps they may encounter general condemnation. But honestly and confidently entertaining them, and for the purpose of opening the discussion, I shall offer them unreservedly.

The general sentiment of the profession, at least since the teachings of Cooper and Abernethy, in England, and Dupuytren, in France, has been decidedly in favor of non-interference by surgical procedures with the depressed portion in cases of simple fracture with depression, except when accompanying symptoms of compression of the brain seemed to point to the depressed bone as the direct cause of such compression. In compound fractures with depression there has been less uniformity

*Read before The American Surgical Association, at its meeting in Philadelphia, in June, 1882.

of sentiment; but it has been generally in favor of surgical interference. As fairly correct indices of recent prevailing professional sentiment, I make the following references and quotations:

Mr. Prescott Hewitt, in his article on "Injuries of the Head" in Holmes's *System of Surgery*, says, "It is now an established rule in our metropolitan hospitals that simple fractures with depression and without symptoms are to be left alone. The depression may be so marked as to be easily detected; and yet so long as there are no symptoms all operative influence of whatsoever kind is to be carefully avoided." Even in depressed fractures *with* primary symptoms of compression, he says, "If the fracture is a simple one and the symptoms are not very urgent, we may postpone the operations." In compound cases of depressed fracture without symptoms he recommends elevation; with symptoms, of course, elevation is imperative.

Mr. Bryant is even more positive and uniform in the practice of non-interference. He says, "In cases of depressed fracture ought the bone to be elevated? and should the fact of the fracture being compound influence the decision? I have no hesitation in answering both questions and asserting that in neither instance ought surgical interference to be thought of unless the symptoms of compression are marked and persistent."

Mr. Gant uses the identical language of Mr. Hewitt on this point, and attributes to Sir Philip Crampton the following statement: "In Dublin we conformed generally to the rule originally laid down by Dease, who preceded Desault by many years, that in fractures of the skull with depressed bone, whether complicated by wound of the scalp or otherwise, no attempt should be made to raise the depressed bone unless very decided symptoms be present of compressed or irritated brain."

Ashhurst says, "Probably few surgeons at the present day would think of operating in a case of simple depressed fracture without symptoms of compression"; and in cases of compound fracture with depression and accompanying symptoms of compression, he would limit the operation within very narrow bounds.

Hamilton, in speaking of this class of cases, namely, simple fractures with depression and without symptoms of compression, says, "The question is definitely settled in the minds of most surgeons who have had a sufficiently large experience, that it is seldom or never advisable in such cases to operate." If, however, the fracture is compound, he says that "prompt surgical interference is invariably demanded."

Erichsen seems more inclined to resort to surgical procedures, and thinks "that the expectant treatment should not be followed too implicitly"; although he, in common with most others, makes the compound character of the fracture the determining circumstance which indicates operative interference. Speaking of this class of cases, he says, "So far as my own experience is concerned, which is necessarily drawn purely from civil practice, I can say that, with the exception of the case that has just been referred to, I do not recollect ever having seen a case recover in which a compound depressed fracture of the skull occurring in the adult had been left without operation; but I have, on the other hand, seen several instances of recovery in which the bone had been elevated and the fragments removed."

Gross goes much further in advocating active surgical measures. In reference to simple depressed fractures, "but not sufficiently far to be productive of compression," he says, "If on the other hand the bone is forced down considerably, so as to impinge very decidedly upon the brain, or if it be comminuted or jagged at the edges, the sooner it is raised or removed the better." With these views of surgical interference in simple depressed fracture without symptoms, his resort to the necessary surgical operation in compound cases is prompt and thorough.

In military practice the expectant plan has generally been the rule; perhaps even more constantly so than among civil surgeons. The exigencies of the service have generally required a neglect of the primary operation in cases without symptoms of compression whether simple or compound; and oftentimes cases with symptoms have necessarily met with the same treatment.

Punctured fractures, on the contrary, have usually been considered as requiring prompt surgical interference whether attended by symptoms or not; and this not so much by reason of the compound character of the accident as from a recognition of the probable comminuted and depressed state of the internal table.

These references are made as indicative of the general sentiment and practice of the English-speaking profession; and, as at the present time the general principles of surgical science prevailing in America and Europe (continental as well as insular) are in tolerable accord, they may be regarded as a fair exponent of professional opinion throughout the civilized world.

And now a question arises so naturally that it seems to spring as a normal growth from the surgical field in its present state of cultivation: Are we not too conservative in the treatment of simple fractures of the skull with depression and without symptoms? I have put the question in the present rather than a past tense because of the modification and improvement of surgical practice in the treatment of wounds consequent upon a recognition of a great truth in so-called Listerism. Without stopping to consider or discuss the truth or falsity of Lister's doctrine of causation in reference to decomposition and suppuration, we can not fail to recognize the great benefits which are derived from that perfect cleanliness which is realized from thorough drainage, antiseptic applications, and approximative exclusion of atmospheric air from the wound. Joints and the great cavities are now invaded with comparative impunity. Gastric resections of slight ultimate promise are successfully made, and abdominal surgery is bold, aggressive, and victorious, while the peritoneum is as susceptible to a rapidly fatal inflammation as are the cerebral meninges. Compound fractures and resections through cancellar bone structure are shorn of most of their previous danger. May not a surgical interference which extensively lays bare the meninges, or even the brain substance itself, profit equally by our improved methods of treating wounds? The answer of this question,

which I assume must be in the affirmative, considered in connection with the peculiarities of fracture of both skull-tables, gives, also, an affirmative answer to my first question, viz: Are we not too conservative in the treatment of simple fractures of the skull with depression and without symptoms? We certainly are if we continue the conservative methods which we practiced previous to the improved modes of managing wounds which now prevail. Non-interference in accordance with most of the authorities quoted *was*, perhaps, correct previous to the late improvement in treating wounds; it is incorrect now. If Dr. Gross, when he said, in reference to his advice to elevate a markedly depressed bone in simple fracture unattended by symptoms, "I am fully, indeed painfully, sensible of the responsibility which I incur in giving this advice," was correct in giving that advice, is it not our duty now to extend the application of his directions to all fractures with depression, however slight, when symptoms of severe concussion or collapse do not contraindicate all operative procedures? If Dr. Gross was correct in his then advanced position, as I confidently believe he was, we are now fully warranted in making his directions include slight as well as severe cases.

The reasons for such extension of his rule are—

First. In all fractures from an outwardly operating force, it is well known that the injury to the internal table is more extensive than that inflicted upon the external; that the fracture is more comminuted and displaced to a greater extent.

Second. The general principle that a fracture should be reduced applies with extreme force to a fracture where the depressed fragment or fragments impinge upon the great nervous center, constituting a point of continual irritation. On this point Erichsen says, "The presence of depressed and spiculated fragments pressing into the dura mater must inevitably and speedily induce encephalitis." This irritation of which Erichsen speaks so positively is, occasionally at least, augmented at a later period by the formation of osteophytes at the consolidating lines of union between the fragments, for although as a rule

no provisional callus, in the ordinary acceptance of the term, forms on the inner surface of fractured cranial walls, osteophytes do sometimes spring from the new bone formation which unites the fragments, and by their needle-like projections give rise to future trouble and compel surgical interference at a period more or less remote.

Third. The dangers and complications arising from the compound character of the wound being reduced to nearly if not actually zero by antiseptic procedures, we are warranted in opening up a simple fracture with depression for the purpose of correcting the displacement.

Fourth. As in compound fractures the removal of loose fragments or the elevation of the depressed portion of bone, even though requiring the use of Hey's saw or the trephine in order to effect such elevation, does not materially add to the dangers of the case, so now in a case of simple fracture, which through improved methods we venture to make compound, we may confidently proceed to a full correction of the displacement. Such operative procedures are, however, contraindicated when symptoms of violent concussion with the attendant tendency to collapse are present; but in the absence of symptoms, or when the symptoms point to compression instead of concussion, operative measures should be promptly instituted.

In this connection I venture to put in a plea for the much-dreaded trephine. Statistics which apparently show against this instrument by exhibiting a large per cent of deaths following its use should also show an absence of inflammation or concussion before its use was resorted to, in order to have any value at all as evidence against it. The operation of removing a disk of bone from the cranial walls, performed with proper care and skill, is not an operation "fraught with danger." There is very little risk of injuring the dura mater with the instrument. If that membrane has not been wounded in the occurrence of the accident for which we resort to the use of the trephine, its safety from injury by that instrument may be pretty confidently assured.

And while I thus defend the proper use of the trephine, I desire also to protest against the use of the chisel or gouge on the cranial walls, if the propelling force is applied by a series of blows from a mallet. A single blow of the force usually required may be insignificant, but the result of a number of them in rapid succession must be proportionate to the aggregate amount of all the blows. Thus estimated we may not be surprised at symptoms of concussion which sometimes follow its use.

Chronic fractures with depression remain to be considered. By this term I suppose reference is had to those fractures in which whatever primary symptoms may have existed they have now subsided, and a consolidation more or less advanced has taken place between the fragments in their displaced position. This consolidation is occasionally attended also by the formation of osteophytes, which spring from the new bone formation which fills the slight interspaces of the fragments. When this chronic condition of depressed fracture is attended by symptoms of cerebral irritation of sufficient gravity to seriously impair the general health or give rise to fears of a progressive tendency in the morbid condition, even though not yet seriously impairing the general health, the time has arrived for surgical interference. The neglect to resort to a primary operation now calls for redress, and that redress consists in the removal of so much of the cranial walls as will include the whole, or at least the most markedly depressed portion, of the depressed fragment. Although the results of these secondary operations do not show a flattering percentage of success, I think that the reason may be looked for in the late period at which the operation is generally performed. It is rare that the patient submits to the dreaded operation till years have been wasted in the vain endeavor to effect a cure by medication. In the meantime the constant irritation has begotten a permanent impression upon the brain and nervous system which remains after the offending point of irritating bone has been removed. To avoid this unhappy condition the operation should be resorted to on the supervention of pos-

itive though slight evidences of cerebral irritation. I venture the opinion that the successful cases of secondary trephining will be found to be those in which the operation has been early resorted to.

In conclusion, I formulate my convictions on the subject thus:

First. In all recent fractures with depression, whether simple or compound, even though entirely without symptoms of compression, if there is reason to believe that the internal table is depressed, and if there are no symptoms of marked concussion or collapse, elevation of the depressed portion should be promptly effected.

Second. In chronic cases, as soon as positive even though slight symptoms of cerebral irritation present themselves, a disk of the cranial walls intended to include the irritating point should be removed by the trephine.

Third. All operations and dressings should be conducted upon strict antiseptic principles.

FOREIGN CORRESPONDENCE.

My Dear Yandell:

LONDON, July 15, 1882.

For once we have had such a fine spring in the old country that even the British farmer does not grumble, but seems hopeful of being in some measure repaid for his losses during the late bad seasons. The London season is now at its height; and the votaries of fashion, unmindful of the sound advice which Mr. Treeves has so recently given them in his lectures on dress, are hard at work laying the foundations of disease from tight lacing, bare shoulders, late hours, and all the other absurdities, which the unseen but arbitrary goddess who rules society imposes on her worshipers.

A meeting at which Dr. Crichton Browne presided, and which was attended by a number of scientific and literary men, was

held at the Marlborough rooms, to witness an exhibition of the phenomena of "thought-reading" by Mr. Stuart Cumberland. That gentleman, with great promptitude and precision, went through the usual performance of finding articles that had been hidden during his absence from the room, of spelling out words thought of by the subjects of his experiments, and of disclosing the date of birth of several members of his audience. At the close of his demonstrations Monsignor Capel, Professor Ray Lankester, Dr. Hack Tuke, Dr. Simpson, and others, complimented him on the success which had attended them, and expressed their conviction that his power in "thought-reading" was superior to that of any other professor of the art who had as yet appeared in London. Professor Croom Robertson said that having been a member of a small committee which twelve months ago investigated the pretensions of Mr. Bishop as a thought-reader, he could testify confidently that Mr. Stuart Cumberland was correct in his interpretations or readings in a larger proportion of cases than Mr. Bishop, and that there was this great difference between them, that while Mr. Bishop left it to be understood that he was aided by an occult force or mysterious influence, which he could not himself comprehend, Mr. Cumberland acknowledged that he was aided in his revelations simply by naturally quick and highly-trained perceptive faculties, and that he was guided entirely in his explorations and discoveries by movements in the hands, which he held or pressed to his forehead. Monsignor Capel said that "thought-reading," or "willing," is practiced in hundreds of drawing-rooms in London; and the chairman expressed his belief that Mr. Cumberland is doing useful work in exposing the impositions of charlatans, and the superstitions of weak-minded enthusiasts. Some spiritualists who were present did not seem inclined to accept Mr. Cumberland's account of his own extraordinary powers, but were evidently disposed to regard him as a clairvoyant, in spite of his disclaimers and of his plain-spoken denunciations of spiritualism in all its manifestations.

At a meeting of the Royal Medical and Chirurgical Society,

the president in the chair, Mr. W. J. Tivy, F.R.C.S., Ed., read a paper on a Case of Double Inguinal Hernia treated by Wood's Radical Cure, with Remarks in Favor of the Wire Operation in Reducible Hernia not easily retained by a Truss.

T. W., aged nineteen, first came under Mr. Tivy's care in February, 1878, with double scrotal ruptures, each of the size of an orange. He had large hernial apertures on both sides, freely admitting three fingers. Both ruptures were easily reducible; but a truss was useless, as the hernia slipped down behind. On 13th of March Wood's operation was performed on both sides, twisted silver wire being used instead of plain copper, in order to produce, by the roughness, a more copious exudation of lymph, and thus a more firm matting together of the parts. The patient did well after the operation, his temperature never reaching 100°. He had no peritoneal tenderness. There was a slight double scrotal swelling, and a moderate discharge from the wounds. He slept well all through and had a daily evacuation. On March 29th, sixteen days after the operation, the wires were easily removed, and a good consolidation was found on both sides, so much so that on July 16th with difficulty could the position of the rings be made out. He had continued cured up to the present time, wearing a truss when engaged at hard work. The patient was exhibited to the society. The author drew attention to some precautions necessary to insure the success of the operation, particularly dwelling on the necessity for selecting healthy patients under thirty years of age. In the operation itself, he urged that the posterior wall of the canal must be carefully included in the parts operated on, and the invaginating finger used with care to protect the peritoneum, epigastric vessels, iliac vessels, and bowel. The sutures must be placed directly opposite to the openings to be occluded; and should not be drawn so tightly as to endanger sloughing. Mr. Wood had preformed his operation three hundred and ten times, in one hundred and sixty-seven of which the result was verified—viz. one hundred and nineteen cures after a lapse of from two to twenty-four years; in the remaining forty-eight the ruptures re-

turned, but in no case to the same extent as prior to the operation. In one hundred and thirty-three cases the patients were lost sight of. Three deaths occurred in the first one hundred cases from pyemia, peritonitis, and erysipelas; in the latter two hundred and ten there was no death and no bad symptom. Several other surgeons, whose names Mr. Tivy gave, had operated successfully in a small number of cases. The most important modifications of Wood's operation were Spanton's screw-operation and the antiseptic stitching up of the neck of the sac with catgut or fishing-gut. Mr. Spanton had performed his operation twenty-five times with twenty-one successes; his operation possessed many requisites for success and was easy of application; but its weak point seemed to be in not drawing the boundaries of the canal into sufficiently close contact. The author proposed to partially remedy this defect by having the screw made much smaller at the handle than at the point, and thus gradually drawing the pillars of the ring into closer apposition by rotating the screw. The stitching operation, of which there were four modifications at least (the best being ligature of the neck of the sac, with excision of the sac and stitching together of the margins of the abdominal opening), was held in favor by Sir W. MacCormac, Dr. P. H. Watson, Mr. Annandale, and others; and statistics of seventy-one cases with fifty-eight cures and four deaths had been collected. The stitching operation was useful for cases of irreducible hernia and for some cases of reducible or strangulated hernia in patients beyond the age of thirty, and for those in whom, owing to ill health, it was not advisable to proceed to the major operation of Mr. Wood. It was not difficult to perform, but it did not afford as firm an invaginating material nor as copious an exudation of lymph as Wood's operation. No patient after the stitching operation ought ever to be without a truss.

The president said that the operation for the radical cure of hernia had taken its place in surgery. He thought that the objection to Wood's operation was not founded on its danger. The real point to be considered was, how far it was permanently

successful. That some of the patients were still obliged to wear a truss was not sufficient evidence against its utility. In some cases, such as large scrotal hernia, a truss was quite inefficient; and in these the operation, though not producing complete cure, reduced the canal so much that a truss could be worn comfortably and safely. He had operated with complete success on a lady who had an inguinal hernia in the canal of Nuck.

A debate followed on cauterization of the varioles of small-pox.

There is an interesting paper in the *British Medical Journal* for last week from C. B. Lockwood, F.R.C.S., in which the author suggests that the rheumatic diathesis may so alter the initial lesion of syphilis in persons otherwise healthy that it becomes "inflamed and phagedenic." Cases are quoted to bear out this theory and also to show that sores of this kind in persons of rheumatic diathesis are aggravated by mercurial treatment, but heal under treatment with iodide of potassium.

There is also a paper on the physics of nerve-stretching by J. Symington, M.B., F.R.C.S.E., Edinburgh lecturer on anatomy, giving nine experiments showing the weights which nerves will bear before they break. In most of the cases the great sciatic nerve did not give way until from one hundred pounds to one hundred and fifty pounds had been attached to it for a minute or more, when it gave way at its attachment to the cord. In some cases the limb and nearly the whole body were raised by the great sciatic without breaking it. Experiment shows that the branches of a nerve will bear a greater strain in proportion to their size than the trunk nerve. The manner in which a beneficial effect is produced by nerve-stretching is very obscure. In some cases of sciatica it may be due to the breaking up of adhesions, etc. pressing injuriously on the nerve. In cases of central lesions it probably acts upon the same general plan as other counterirritants. There is abundant clinical evidence to show that the operation of nerve-stretching produces a powerful local action—not unfrequently being followed by temporary paralysis. Then again it produces a marked effect upon distant nerve-

centers, such as the respiratory and cardiac. As a counter-irritant, it stimulates not merely the nerve but also its connecting trunk and branches. Traction upon the peripheral ends of a nerve can be performed with more safety than traction on the central end, the former being the stronger; and the nervous stimulation would probably be as great, if not greater.

There is an interesting case recorded in the British Medical Journal for this week showing the difficulty in some cases of diagnosing syphilis from cancer.

History. A very respectable married woman, aged fifty, living far out in the country, with no family, began to suffer from her throat, having pricking pains, like a knife on both sides. For four months the difficulty and pain in swallowing increased, till only liquid nourishment could be taken, and she was obliged to hold the fluid in her mouth for some time and let it trickle down into the gullet by slow degrees. Flesh and strength were reduced and she was confined to her bed. The attention was at once arrested, on entering the room, by the extraordinary fetor emanating from the patient. It was of that peculiarly pungent stinking quality characteristic of cancer in its later stages.

Physical Condition. The uvula and soft palate were unaffected on the buccal surface. The back of the pharynx was covered thickly with purulent secretion. On examination with finger, a rugged irregular mass was felt, occupying the back and right side of the pharynx; the surface was knobbed, hard, and bossy; the secretion very adherent, even after repeated douchings, so that the color of the part could not be ascertained. Laryngoscopic examination was unsuccessful, owing to the irritability of the throat and constant welling up of frothy fluid; the voice was unaffected. There was tenderness on pressing laterally over the transverse processes of the vertebræ, and on rotating the head a distinct grating sensation was felt. Palliative treatment with iron was adopted and a gloomy prognosis given. Shortly afterward Dr. Dorapes, who was in charge of the case, learnt from an apothecary that both the woman and her husband

had had syphilis not many years before. Accordingly mercurial inunction and iodide of potassium in treacle were prescribed and the woman made a rapid recovery.

Mr. R. D. R. Sweeting, the superintendent of the Fulham Smallpox Hospital, has published a number of cases of concurrent variola and vaccinia, collected during the epidemic of the past year. Most were vaccinated on the third and on the eighth days of the incubation period, the times ranging through almost all of the twelve days of that period. The vaccination observed on admission consisted usually of pustules, three in number. The variety of smallpox was in most of the cases confluent. In twenty cases only one death occurred, and recovery was noted as prolonged and attended with complications in seven, rapid in two. In the majority of the confluent and coherent cases, vaccination was performed from the eighth to the twelfth day of incubation; in the discrete this took place within the first three days. The fatal case was vaccinated at the end of the period; the majority of the prolonged and complicated recoveries during its latter half; while both the rapid recoveries were early vaccinated. On comparing the variety of disease with the number of resulting pocks, we find most of the confluent and coherent cases vaccinated in three places, while the discrete are not vaccinated in less than four.

Thirteen cases of revaccination are also given. The author draws attention to the fact that not one of these cases was well primarily vaccinated. All the discrete cases were revaccinated within the first five days of incubation, the majority on the fifth day; in the coherent and confluent on the other hand, the operation took place from the sixth to the twelfth day. The two fatal cases were revaccinated on the seventh and twelfth days respectively and the most protracted recovering on the eighth.

The general conclusions to be drawn are: 1. Primary vaccination, after definite exposure to the infection of smallpox, should be performed within three days and in four places, in order to insure a slight uncomplicated attack and a rapid recovery. 2. Revaccination should not be delayed beyond the fifth day

after such exposure, in order to insure a discrete attack and recovery.

Some months ago I called attention to Dr. Stephen McKewie's case of hemato-chyluria. The patient, who was a young bombardier, was shown to the Pathological Society in October of last year. He then seemed in pretty good health, but every night his blood swarmed with embryo filariæ. It was calculated that somewhere about forty millions circulated in his blood nightly, while by day they entirely disappeared. It was found that by reversing his habits, by making him turn night into day, the filarial periodicity could also be reversed. How the embryos vanished, whether they were periodically destroyed or whether they lay hid in the pulmonary vessels, as Dr. Patrick Manson supposes, was a mystery, and a mystery it still remains; for all signs of the filariæ disappeared after a rigor from which the patient suffered three months before his death. The fatal result was due to exhaustion after double pleurisy, empyema, and cystitis. At the last meeting of the Pathological Society a dissection of the thoracic and abdominal lymphatics from this case was shown. All the vessels were greatly dilated, and the thoracic duct was occluded for some distance. At the same meeting Mr. Shattock showed a beautiful specimen of adult filariæ, involved in a large clot in the right auricle of a human heart. The parasites projected from the clot in every direction, looking like long coiling strands of whipcord. The progress of our knowledge of this curious disease has been retarded by the fact that of the countries where it is most prevalent, in India it is difficult and in China it is well-nigh impossible, to obtain leave to make a post-mortem examination.

Mr. Swinford Edwards, F.R.C.S., publishes a case in the British Medical of foreign body in the bladder, complicated by stricture of the urethra. J. L., aged forty, laborer, was admitted into St. Peter's Hospital on November 8, 1881. He had suffered from stricture of the urethra for six or seven years. Twelve months previously the stricture was dilated up to eighteen millimeters by catheters. As his urine was continually drib-

bling away and no instrument could be passed, he was admitted to the hospital. After hot baths and a morphia suppository a No. 2 catgut bougie was passed by the house-surgeon. On the following day a No. 4 bougie was successfully introduced. On November 10th the same bougie was passed in the morning. Toward 7 P.M., as the patient had not been able to empty his bladder all day, the house-surgeon endeavored to pass a catheter, but without avail. So he introduced a No. 4 pilot bougie and screwed on a catheter, which was passed into the bladder. By this means the patient's urine was drawn off. On withdrawing the instrument the patient gave a violent twist, just as the junction between the pilot bougie and the catheter was passing through the stricture, the effect being that the bougie was left on the proximal side of the stricture, so as to occupy the bladder and prostatic urethra; the stricture being in the membranous portion. The long urethral forceps were immediately passed down, but without success. As the stricture had been dilated to No. 12, and the patient was suffering no pain nor inconvenience, he was left for a while. Two days after, the patient being placed under ether, Mr. Edwards performed internal urethrotomy, using the Teevan-Maisonneuve urethrotome; after which he passed a small lithotrite, by means of which he seized and removed the pilot bougie. The bougie, which was twelve inches long and No. 4 oval, was found to have in places a considerable coating of phosphates.

The after history of the case is in no way remarkable. The patient left the hospital a fortnight after; he is able to micturate freely and comfortably; he occasionally passes a No. 22 bougie.

It is felt by the many friends and admirers of Charles Darwin that, though his works are the best and most enduring memorial, this should not be the only one; and they are desirous of handing down to posterity the likeness of a man who has done so much for the advancement of natural knowledge. They also wish to establish a fund associated with his name, the proceeds of which will be devoted to the furtherance of biological science. A committee has been formed, which consists, as it is fitting it

should, of the most eminent in science and in every rank of society.

At the meeting of Convocation of the University of London the following vote of condolence with the family of the late Mr. Darwin was unanimously adopted: "That the graduates of the University of London, in Convocation assembled, desire to record their sense of the irreparable loss which science and philosophy have sustained in the death of Mr. Darwin, whom they recognize as an acute and patient observer, an earnest seeker after truth, and an original thinker, whose writings have exercised a profound influence upon the progress of science and scientific thought throughout the world."

On the following day, which was "Presentation day," Sir John Lubbock, the member for the University, referred in eloquent terms to the deceased naturalist. He dwelt especially on the change in public opinion, which was manifested by the large attendance not only of men distinguished in science and literature but also of eminent theologians and divines at the funeral in Westminster Abbey. Loud applause greeted the speaker, when, in a voice tremulous with emotion, he spoke of the earnest and reverent feeling which pervaded all that Mr. Darwin had written, and of the warm affection with which he was regarded by all who had had the privilege of his personal acquaintance.

Reviews.

A Treatise on the Science and Practice of Medicine; OR, THE PATHOLOGY AND THERAPEUTICS OF INTERNAL DISEASES. By ALONZO B. PALMER, M.D., LL.D., Professor of Pathology and Practice of Medicine, and of Clinical Medicine in the University of Michigan, Physician to State University Hospital; formerly Professor of Materia Medica and Practice of Medicine in the Berkshire Medical College, Massachusetts, and Professor of Pathology and Practice of Medicine at Boudoin College, Maine; Honorary Member of the New York State Medical Society; ex-Vice-president of the American Medical Association, etc. New York: G. P. Putnam's Sons. 1882. Pp. 903.

Prof. Palmer begins his preface with this reasonable proposition: "In adding a new work on the science and practice of medicine to the number already claiming the attention of the American profession, it seems proper that some reasons should be given for having undertaken its production, and some justification should be offered for its existence." And he proceeds in apparent good faith to offer his reasons for writing and to justify the existence of his book.

First. His students requested him to write, and he recognized that they had no text-book suitable to follow him in his lectures.

Second. He had to fulfill a promise made to numerous practitioners who had formerly been his auditors, who desired the substance of his teaching in more permanent form.

Third. There are not enough American treatises to supply the demand of the American profession, as is evidenced by the large number of foreign works reproduced and sold in this country. It does not appear to have occurred to the author that he might have overcome this difficulty and saved himself years of labor by ordering larger editions of works already in existence.

Fourth. He joins the judicious members of the profession who have had opportunities for observation in the opinion that foreigners are not quite competent to guide American students and practitioners in their professional duties; in fact he has doubts whether foreign authors "are even safe guides in the treatment of the ordinary diseases in this country." And he has still better authority for this conviction stated thus: "In the International Medical Congress, recently held in London, the statement was made and accepted without dissent, that each nationality had its own peculiarities of disease, requiring peculiarities of treatment; and climatic influences, as different as they are upon the two continents, must, at least in many cases, vary the remedial measures indicated." This idea is reënforced by another paragraph, apparently leaving our author with the clearest convictions on this point. This position is not altogether fanciful, indeed has a color of support in established facts, and if presented in the text as a part of the instruction inculcated, would be a good thing in its proper place, but urged in the author's preface as a reason why his book should be purchased and the foreign authors' rejected, permits the reader to see that by possibility the American author might have a tinge of bias in his judgment. Moreover, the argument carried to its logical conclusion would convince that practical medical directions formulated for Michigan would not be suitable for Kentucky.

Fifth. Another reason for discrediting foreign works is, that "The authors of these foreign works have derived their experience upon which conclusions are based from a consultation practice in large cities and from attendance upon patients in large city hospitals," because in these situations they do not see patients in the early stages of disease, and in hospital practice the ill are from the ranks of the badly nourished, intemperate, and degraded classes, and "these facts explain the prevailing skepticism among these authors as to the efficacy of remedies and their failure to appreciate their effects when early given."

On the other hand, our author says, "The present work has been prepared from the standpoint of an American physician

whose practice for years was in a village and farming community, who has become familiar with diseases in their beginning as well as in their advanced stages, both in a country and a city practice—more in the West, but also in the East; in the army during the late war as well as in civil life—from the standpoint of one who for years has been engaged in public clinical and hospital as well as in private practice, who has long acted as a consultant as well as an attending physician, and whose observations have extended to the large city hospitals of our own country; and who, years ago, as well as since this work has been in preparation, has made brief but careful observations in most of the medical centers of Europe.”

Certainly these were grand opportunities for imbibing useful knowledge, and it is a great comfort to have assurance that while the author has looked into such dangerous places as large city hospitals, and twice visited the demoralizing medical centers of Europe, he has not at any time remained long enough in the one place to contaminate the purity of his early village science, nor in the other to shake his in the power of medicine to cure disease if given early to good men in certain places in New England and southern Michigan.

Prof. P., after announcing that the time for a scientific classification of diseases has not arrived, describes the general scope of his work in these words: “As the most natural order, however, certain physiological and pathological facts and principles have been first presented, elementary morbid changes are next described, and an account of particular general diseases follows. Local diseases are then treated of, beginning with those of the digestive organs; the accounts of the diseases of other systems of organs follow, closing with the complex affections of the nervous system. An account of human parasites is added, and a description of the internal diseases they produce closes the work.”

An examination of the volume discloses that the matter of it is not divided into chapters nor sections, but into three grand divisions: I. General Pathology and Therapeutics—to which are

devoted one hundred and fifty-seven pages; 2. Particular General Diseases—discussed in three hundred and ninety pages; and 3. Local Diseases—covering the remainder of the book, three hundred and forty-nine pages. Under the third grand division, the author treats of the diseases of the alimentary canal and the digestive system and—nothing else. The volume ends abruptly here without explanation or intimation that another volume or other publication is to follow, allowing one to entertain the possibility that the promised discussion “of the diseases of other systems of organs, closing with the complex affections of the nervous system, etc.,” were lost between the author and the publisher and the accident was not noticed by either.

Entire originality is disclaimed by the author, and he says it has been his “purpose to give proper credit for all materials made use of which can not be regarded as the common property of the profession.” On page 6 he quotes from five distinct authors without naming one of them, although saying they are “writers who represent the best general sentiment of the profession.” And in the whole volume only two foot-notes have been observed giving name, work, and page of an author quoted or referred to. One of these, on page 108, is where he opposes a quoted sentiment of Bristowe, who doubts the direct cure of inflammation by means of drugs, and the other, on page 766, where he alludes to a proposition of Flint’s, and apparently approves it; this being the early resort to abdominal section in intussusception of the intestine.

While pathology, symptomatology, and diagnosis are recognized by Prof. P. as important, he devotes his energies more especially to therapeutics, saying, “Both the student and the practitioner feel the want of full and specific accounts of the *treatment* of diseases in their earlier as well as in their later stages, in their milder as well as in their graver forms, and an attempt has been made to supply that want.” And he has written much in the text to redeem this promise of his preface. Let us briefly epitomize his drug management of three important disorders.

Although typhoid fever is not mentioned in his index, he speaks of it very fully, and the details of his "curative treatment" is begun on page 269. As abortive measures he refers to quinia, mercury, and iodine. Mercury has most testimony in its favor. Calomel in doses of ten or twenty grains may do good, but he fears irritation in such quantities. He says, "I repeat, however, that general experience and certainly my own justifies the judicious use of mercury in the early stage of the disease, and occasionally conditions occur at a more advanced period when this article is useful." He doubts the abortive value of quinia, and thinks the reputation of iodine not sustained. After a few days abortive efforts should be abandoned, and for conducting the fever to a favorable termination he names many things. Venesection is not applicable to every case, "yet there are cases where it may be used with decided advantage, where a plethoric state and certain congestive and inflammatory conditions are present." For excitement, with strong and rapid pulse, veratrum and aconite are recommended, and for pain and restlessness, morphia, camphor, pot. bromide, and chloridum. For diarrhea, opium, ipecac, acet. lead, tannin, alum, and bismuth are approved, but his abiding faith rests with turpentine in five-minim doses, more or less in emulsion with tr. opii, and if tympanitis be present, with one or two grains of pure carbolic acid in each dose. These are the leading measures, but it requires twenty-six pages to rehearse all the measures he recommends for the cure or management of typhoid fever. An author who justifies serious attempts to abort true typhoid fever can scarcely be accounted as fully imbued with the best medical thought of the day, and surely the recommendation of mercury, venesection, and turpentine in the same disease must be done under the light of other days.

In treatment of diphtheria Prof. Palmer apparently attaches most importance to local remedies, and for such applications he enumerates thirty-one distinct medicaments, and the number of the combinations of these was not counted. They vary in strength from nitric acid to simple water, and are applied in

liquid, solid, and gaseous forms. For the constitutional treatment of this condition he tells of twenty-two drugs, and knows of more reported in the journals of the day, but himself has not sufficient knowledge to affirm or deny their value. This extensive catalogue of remedies, will be a source of much gratification to the medical neophyte who has a limited knowledge of the pathology of diphtheria, and of its probable course and termination.

Acute rheumatism offers a superior field for our author to display his *penchant* for the exhibition of many medicines, much of them and long continued. But he does not avail himself of his opportunities to a great extent. He admits the occasional utility of general bleeding, the value of mercurials, but deprecates pyalism, the service of quinia, colchicum, guaiacum, and some other drugs. His favorite treatment for many years was a modified form of Fuller's alkaline method, but lately he has relied on first a cathartic, then a scruple of salicylic acid with a quarter of a grain of morphia and twenty or thirty grains of bicarbonate of soda, the acid and soda to be repeated every two hours and the morphia as needed. With some modifications this plan is continued until the disorder abates. This is a pretty fair treatment of rheumatic fever, although MacLagan has shown that salicin ought to be substituted for the salicylic acid, and the quantity named should be administered every hour, omitting the other ingredients, and continue until the pain and fever is relieved.

It is thus shown that the author has succeeded in his efforts to furnish "full and specific accounts of the *treatment* of diseases in their earlier, as well as in their later stages." Whether the quality of this work is equal to its quantity, perhaps the reader can conclude for himself from the specimens presented.

Perhaps also the reader will be able to judge of the style and character of the whole book from the liberal extracts made from its preface and their illustration by reference to several appropriate succeedants in the body of the work. The volume, as a whole, impresses one as being the leisurely labor of a self-satis-

fied teacher who has for the major part of his life gone on in the even tenor of his way, reading, observing, cogitating, and speaking in a kind of rural seclusion and innocence where there were none to oppose, and no friction with the bustling denizens of busy centers, such as causes earnest workers to shed their absolute ideas and to cultivate new ones as an affair of necessity to evolve them full abreast with their competing fellows. This view leaves one under a cloud of doubt, whether a treatise on the practice of medicine having such a genesis is a more profitable companion or a safer guide to the student or fresh practitioner than one emanating from an acute physician who resides and practices in a great city and adds to his professional knowledge by official work and observation inside a metropolitan hospital. To prepare a treatise of this kind seems to have been regarded by its author as one of the incumbent functions of his position, and he has discharged the obligation at his leisure, without worry and in a perfunctory manner.

J. F. H.

Sympathetic Diseases of the Eye. By LUDWIG MAUTHUER, M.D., Royal Professor in the University of Vienna. Translated from the German by WARREN WEBSTER, M.D., Surgeon United States Army; JAMES A. SPALDING, M.D., member of the American Ophthalmological Society, Ophthalmic Surgeon to the Maine General Hospital. New York: William Wood & Co. 1881. 12mo. Pp. 220. Cloth, price \$2.

This comprehensive monograph, by a well-known specialist, is one of a series intended to embrace the whole province of ophthalmology, and is presented with the two-fold object of compiling for the ophthalmic surgeon "the widely diverse opinions on the subjects under discussion," and enabling "the general practitioner and the student in ophthalmology to gain an insight into the pathology, and especially into what should be the practical treatment, of the more important diseases of the eye."

The causes and kinds of sympathetic inflammations are

clearly described in this volume. Many cases are collected and carefully analyzed, and light thrown on them from the abundant experience of the author. The work will undoubtedly prove of great value in directing attention to an important class of eye-diseases, but little understood by the general practitioner. Yet we are not convinced that either class of readers to whom the volume is addressed will be entirely satisfied with it. The ophthalmic specialists may agree that "dark and complicated seems the possible way in which inflammatory processes are transmitted along the ciliary nerves," but they will hardly admit that "the matter is relatively simple in the case of the optic nerves," or that in the latter "we have only to picture the transmission of an inflammation from nerve to nerve." Makenzie long ago put forward this view, but it has generally been abandoned with the opinions that are held at present in relation to inflammatory processes. The views of Professor Leber—who substitutes *an infection* for *sympathy*, and the lymph-channels found along with the optic nerves as the pathway along which the organisms travel—are in better accord.

The general practitioner will not be greatly instructed by the forty pages of theorizing as to how the sympathy travels from one eye to the other, and is likely to conclude that the entire work is unnecessarily technical. The translation is well done.

J. R. W.

A Treatise on Diseases of the Eye. By HENRY D. NOYES, A.M., M.D., Professor of Ophthalmology and Otology in Bellevue Hospital Medical College; Surgeon to the New York Eye and Ear Infirmary; President of the American Ophthalmological Society; Member of the New York Ophthalmological Society; Permanent Member of the Medical Society of the State of New York; Member of the New York Academy of Medicine, etc. New York: William Wood & Company. 1881. Pp. 360.

This work is the December number, 1881, of Wood's Library of Standard Medical Authors, and in it the author has attempted

to condense into reasonable limits the substance of modern ophthalmic knowledge. After presenting briefly the general anatomy of the globe, the general physiology of the eye, the mode in which the eye and its appendages are supplied with blood, directions for a methodical examination of the eye, the general nature of diseases of the eye, with their etiology and treatment, the author considers the disturbances of refraction and muscular function, devoting seventy-one pages to this part of the work.

In part second the diseases of the eye as they are usually understood are presented. In this portion of his book special merit is due the author for being less technical than writers on his specialty usually are. He writes in a plain, vigorous style that constantly gives evidence of his having a personal familiarity with the subject under consideration. In both parts of the work the diseases described are considered in relation to both the pathological and physiological questions involved. These relate most frequently to the brain and nervous system. As in both parts, we are conducted to the brain; in the first by the motor nerves; in the second by way of the optic nerve. With those questions in general medicine that lie outside of his specialty, the author gives evidence of knowledge hardly to be expected.

The diseases falling within the province of a treatise of this kind are well described, and the treatment, both medical and surgical, are hardly any where open to objection. This fact is worthy of notice, for the reason that it is often true, the most skillful operator is a very bad prescriber.

In describing the various operations practiced on and about the eyelids, our author does not mention hot water as a hemostatic agent: the use of ice is recommended. Our own experience in operations of this kind, as well as in the operations of general surgery, leads to the conclusion that the former agent is much superior to the latter.

The illustrations, with which the work is well supplied, while not examples reflecting the highest credit on the engraver's art, may be considered as satisfactory when the low price at which the work is furnished is taken into consideration.

J. R. W.

Materia Medica and Therapeutics—Inorganic Substances.

By CHARLES D. F. PHILLIPS, M.D., member of the Royal College of Physicians, etc. Edited and adapted to the U. S. Pharmacopœia by LAURENCE JOHNSON, A.M., M.D. Vol. I, pp. 298; Vol. II, pp. 340. 8vo. New York: William Wood & Company.

These two volumes represent the April and May numbers of Wood's Library of Standard Medical Authors. The first part of Dr. Phillip's *Materia Medica and Therapeutics*—the "Vegetable Kingdom"—was published in Wood's Library in 1879, and these two volumes on inorganic substances complete the work.

The manner in which the various substances are considered, is, first, as to their absorption and elimination by the body; then the physiological action, toxic action, and antidotes when a poison, therapeutic action, external and internal, incompatibles, preparations, and doses. In volume one, twenty-seven pages are devoted to the therapeutic use of water, hot and cold. The indications and the contraindications for the warm and cold bath, for the wet pack, for the Turkish bath, for the sitz bath, for the steam bath, and for fomentations are given.

There are many diseases in which these various applications of water are recommended, the principal ones being fevers in general, puerperal fever, typhoid fever, and in mild cases of scarlatina, tepid or cold sponging, and during desquamation, warm baths. In the sore throat of scarlatina it is best to have the throat bathed with water as hot as can be borne, for about five minutes every three or four hours, and directly afterward a bandage wrung out of water at about 112° F. should be applied and covered with oiled silk. The good results of hot water in uterine hemorrhage and also cold water in insomnia are noted. In typhlitis, local applications of ice, or at times smoking hot fomentations, are curatives. There seems to be much confusion in the minds of medical men as to the use of hot and cold water in the different forms of sunstroke or thermic fever. This author says, "When the head is hot, the pupils contracted, the pulse full, and the temperature high, cold packing is decidedly indicated, also cold affusions, especially to the head." In menin-

gitis, ice to the head is valuable, unless the face be pale. The classification and use of the many mineral waters is considered in twenty-seven pages.

While this *Materia Medica* may not always suit the practitioner as a reference-book, on account of the concise manner in which it treats of remedies, it certainly is well adapted as a text-book for students of medicine. There is a copious index for the two volumes at the close of volume two.

A. M.

Manual of Diseases of the Skin, with an Analysis of Eight Thousand Consecutive Cases, and a Formulary. By L. DUNCAN BULKLEY, A. M., M. D. New York: G. P. Putnam's Sons. 1882.

This is really a good book. It tells of the several skin-diseases in a small compass. It contains a number of useful formula. And, being about one tenth the size of Dr. Bulkley's previous volumes, is just ten times the best work he has yet produced. To the general practitioner it will prove most useful.

Clinic of the Month.

ON BASIC CAVITIES—THEIR TREATMENT.—Dr. J. Mitchell Bruce, F.R.C.P., Assistant Physician to the Charing Cross and Brompton Consumption Hospitals, London, communicates to the Practitioner two excellent papers on the subject of basic cavities, the last of which contains the following directions for their treatment:

The directions in which the treatment of basic cavities is to be pursued are distinctly indicated by nature, for it is easy to gather the circumstances under which the improvement and relapse respectively occur. Of all these circumstances retention of the discharge is attended by the most unfavorable symptoms, while a free, moderate daily expectoration is the rule in cases that are quiescent or improving. We have here the most obvious indication for the free evacuation of the contents of the cavity. But however free the discharge may be, the condition of the patient is not favorable as long as the sputa are markedly foul, and disinfection of the lung is therefore distinctly necessary. Again, inasmuch as one of the chief dangers of the condition is the occurrence of secondary complications, immediate treatment of the case is called for, and must include measures that sustain or improve the general health and diminish especially the liability to tuberculosis. Lastly, should any specific cause, such as syphilis, be present, it will manifestly call for special treatment.

In attempting to fulfill these four leading indications, we must first relieve the patient of all work, and secure to him every possible advantage in respect of food, air, and clothing. A cool or moderately cold atmosphere is certainly better than a moist or warm one; and this point must be kept distinctly in mind if treatment by climate be undertaken. The disinfection of the lung will probably prove to be urgently required, and we have abundant choice of remedies for this purpose, medicinal and mechanical. The most obvious method of cleansing a foul cavity within the chest is by antiseptic inhalations,

whether intermittently or continuously employed. I need not enter into the details of ordinary intermittent inhalation of such antiseptic substances as carbolic acid, creasote, or iodine; nor need the inhalation of the vapor of tar from a specially constructed apparatus be more than referred to. Unquestionably both methods are very valuable, and in mild cases they may suffice to control the decomposition of the sputa. When the sputa and breath are thoroughly offensive, however, these occasional means will certainly fail. The system of continuous inhalation may then be tried, the compound of iodine, creasote, and ethers being especially valuable. I am myself disposed to place less reliance upon disinfection by any means from without than upon the system of disinfection of the lungs from within—i. e. by the internal administration of disinfectant substances which shall be excreted by the respiratory passages. I am accustomed to give tar in two-grain doses in the form of pill, three times a day, believing as I do that excretion of the tar or its products is effected by the respiratory surfaces. I believe that such disinfection by excretion is more thorough, reaching as it does the depth of the "secretions." But in thoroughly foul cases I would not hesitate to combine the internal and external systems; indeed some patients may be unapproachable unless their mouth be guarded by an "antiseptic respirator."

When the foulness of the sputa is overcome we must next endeavor to promote the emptying and closure of the cavity. Evacuation is urgently called for, and may be accomplished either by expectoration or by drainage. Nature suggests expectoration as a means of evacuation, and we are prepared to find a good result in some cases from the exhibition of senega, carbonate of ammonia, and squill. These drugs probably act rather by preventing retention than by directly emptying the cavity itself. The effect of posture is as distinctly available. We must desire the patient to study carefully the effect of different postures in inducing cough with free expectoration, including the various cubitus, stooping, and even inversion, and to practice systematically the particular attitude that promotes evacuation of the sputa. Many patients may live in comparative comfort by carrying out this simple plan.

Direct drainage by tapping is a thoroughly rational method of evacuation, and one which appears to be particularly suitable in cases of traumatic abscess. I can not say, however, that the results of operation for draining basic cavities have been sufficiently successful to warrant my recommending it in any but exceptional cases. One of the most serious objections to the practice is the uncertainty of the adhesion of the diseased lung to the chest-wall—i. e. the obliteration

of the pleural sac over the cavity. In the case of Hol, above recorded, in which a cavity certainly existed for eighteen months, the pleural surfaces were found post mortem to be non-adherent, and any operative interference with the diseased area would certainly have led to pyopneumo-thorax of a serious kind. Success may, perhaps, reward the attempts that are now being made to establish local pleurisy and adhesion over the site of *vamicæ* before operating upon them; but such proposals are too immature to be discussed as a subject of routine practice.

Side by side with these local measures, the practitioner must carry on general treatment of a systematic kind. It will be well in this respect to regard the patient as practically phthisical, and to arrange the therapeutics accordingly. Cod-liver oil should be given in every chronic case. The medicinal remedies to be exhibited will depend upon the digestive and general nutritive ability of the patient, and will include alkalies, acids, iron, hypophosphites, quinine, and other tonics, as indicated. If the disease have a distinct connection with syphilis, iodide of potassium or iron, and even local mercurial inunctions, should be tried; but as long as the discharge is abundant and very foul the patient will rarely be found able to undergo such powerful medication of an alterative kind.

To sum up: The system of treatment which appears to be, on the whole, most successful in basic cavities includes residence in a cool aseptic atmosphere; the maintenance of as perfect hygiene as possible; the internal administration of tonic, nutritive, and, if necessary, specific remedies; the systematic employment of posture and expectorants as means of evacuation; and the continuous disinfection of the walls and contents both by external and internal measures.

INFLUENCE OF ANTISEPTICS ON THE PERIODS OF AMPUTATION AFTER CRUSHING INJURIES.—We abstract the following on this very interesting subject from a recent clinical lecture by Dr. Stephen Smith, published in the *Medical News*:

When called to a case of injury by the crushing effects of a car wheel, you should first examine to determine whether or not the wheel traversed the limb. If you are satisfied that it did pass directly over it, the limb can not be saved; amputation is inevitable. If, however, you decide that the limb was pushed off the rail by the wheel, the question of amputation will be more or less doubtful, according to the nature and extent of the injury. In our time we can save limbs that surgeons formerly would not hesitate to amputate. As a rule, if

the arteries and nerves are still intact, the limb can be saved. Disinfectants and plaster of paris judiciously used will save the most unpromising cases of this kind.

Why—alluding to the case which was the subject of his lecture—was the operation, when amputation was from the first inevitable, delayed to this critical period? It will be a sufficient answer to that question to state that the patient is in better condition for the operation today than he has been at any time since the injury was received. In explaining this statement, I wish to emphasize the fact that antiseptics, efficiently employed in these cases, greatly modify our procedures. When it was decided that the injury necessarily involved the loss of the limb, the patient was profoundly under the influence of the shock of the injury. His surface was pallid, his pulse small and rapid, his respirations hurried; he was restless, and large drops of sweat stood on his forehead. The first indication was, therefore, to restore him from the shock, which threatened life immediately. Stimulants, dry friction, and external heat were employed. The second indication was to dress the limb. The appliances used were these, viz: The limb was laid on a rubber cloth, placed on pillows, and so arranged as to make a trough, which inclined downward toward and beyond the foot of the bed. Above the limb a bottle was suspended, containing a three-per-cent solution of carbolic acid, from which a common candle wicking depended; the wicking was so arranged that the carbolized water constantly fell on the entire crushed wound, and the water ran off into a vessel at the foot of the bed. The object of this irrigation was to prevent putrefaction and inflammation.

The patient slowly rallied, and at the end of eighteen hours was warm and in a favorable condition. Formerly this was the period for amputation, for the danger which the older surgeons feared was the impending inflammation, which usually began in about twenty-four hours. But no prudent surgeon has subjected such a patient to the second shock, which results from an amputation, without a feeling of keen regret and with intense anxiety. Too frequently has he been arrested in his operation by the announcement of his assistant that the patient was pulseless. Artificial respiration, hypodermic injections of brandy, etc. have rallied the vital forces so that the operation could be completed and the patient removed to bed. But the revival was momentary. The nervous centers were too profoundly damaged to maintain their functions, and death was inevitable.

Since carbolic acid has become so generally used in wounds I have ceased to regard time as an element in amputations. My attention was first called to the power of this class of agents to prevent

inflammation many years before carbolic acid came into use. A crushed foot came under my care, and it was doubtful whether an amputation would be required or not. I suspended the limb and irrigated the wound with creasote water for ten days, during which time there was not the slightest evidence of inflammation in the part, nor was there any fever. At the end of that period it was apparent that the foot could be saved, and only the simplest dressings were required to perfect a cure.

It is now a matter of every day's experience that carbolic acid constantly applied to crushed tissues, as in irrigation, will arrest all tendency both to putrefaction and to inflammation. This boy is a striking illustration of the power of this agent to protect a patient from those secondary evils which occur to injured parts. For four days this patient has been recovering from the primary injury without being in the slightest degree damaged by the local conditions. There has been no other fever than that of reaction from nervous prostration, and that passed off on the second day. He has been taking food freely, his sleep is sound and refreshing, his pulse is nearly normal, and in every respect he seems to be fully restored. The shock of amputation will now be comparatively slight; certainly will not be dangerous in the sense it would have been if I had amputated within twenty hours of the injury. But to guard him against the possibility of harm, he has been taking two teaspoonfuls of whisky with milk every hour for four hours, which has caused moderate exhilaration.

It is not absolutely necessary to amputate today, so far as the limb is concerned, for we can maintain it in this inert state for many more days, but the patient's general condition is entirely favorable, and as amputation is inevitable it might better be done now, and thus diminish the total length of time required for recovery.

The lesson which I wish to impress upon your minds is this, viz: In crushing injuries requiring amputation, treat the lacerated parts with carbolic-acid water applied by means of irrigation, and delay the operation until the patient is in a favorable condition to endure the shock. I need scarcely say that the same treatment should be adopted in similar injuries which do not require amputation, during the period of impending inflammation. But to be useful the solution must penetrate the injured tissues, and to effect that it is often necessary to make incisions through the skin.

SURGERY OF THE URINARY ORGANS.—The recent advances in the surgical treatment of diseases of the urinary organs are

the most interesting topics of discussion at the medical societies of London at the present time. Last week, at the Medical and Chirurgical Society, Sir Henry Thompson described a case of pedunculated fibroma of the bladder, which he had successfully treated by removal through a perineal incision. The patient was originally under treatment for calculus, and was submitted to lithotrity more than once, but the symptoms were not completely removed; and then, on careful exploration of the bladder, the tumor was grasped, although, as it was coated with phosphatic deposit, it was mistaken for a sacculated stone. Sir Henry Thompson opened up the membranous portion of the urethra from the middle line, and then, after detecting the true nature of the case, removed the growth by twisting it off with a pair of forceps. There was no bleeding to speak of, and the man made an uninterrupted recovery. Sir Henry strongly urged that where it is necessary to open the bladder for diseases other than stone, it is better to open the membranous urethra in the middle line than do either the "lateral" or suprapubic operation. He insisted that the bladder could be efficiently drained and explored through this incision, that most tumors of removable size could be removed through it, and that it was a far simpler and safer procedure than either of the others. In the subsequent discussion many speakers joined issue with him on this point; Mr. Bryant, Prof. Marshall, and Mr. R. Harrison, for instance, preferring the "lateral" incision. But of course the chief point raised in the discussion was the diagnosis of the tumors which are capable of this treatment from those which are not, the most reliable points in favor of the former being youth and the absence of induration on rectal or vaginal examination. Sir Henry Thompson's case will probably be of great service in drawing marked attention to the subject, and especially in encouraging surgeons in exploring the bladder through a perineal urethral wound, which, he says, can be done so easily and so efficiently. As this operation is practically free from danger, it will probably be used as an aid to diagnosis as much as for treatment. (Correspondence Medical News.)

TREATMENT OF DIPHTHERIA IN THE PAST EIGHT YEARS.—
Dr. Ernest Kormann, of Coburg, has recently written a review of the literature concerning the treatment of diphtheria in the past eight years, and this review is thus summarized by the Medical Record:

The number of contributions to this branch of the subject alone is very large, being nearly one hundred and seventy. It may be a source of gratification to know that Americans were authors of about one eighth of these articles. The English contributions numbered only nine, and the French about the same.

There are articles by twenty-four authors on the prophylaxis of diphtheria. These recommend various measures, most of which are known. The most complete harmony is on the subject of isolation and cleanliness. The next most unanimous recommendation is as to the value of frequent gargling. The agents oftenest recommended are potassium chlorate and limewater. But many recommend salicylic acid, potassium permanganate, astringents, myrrh, hot and cold water, carbolic acid, etc. Penciling the throat with carbolic acid or other disinfectants is also advised. Internal medicines receive fewer recommendations except in the case of infants who can not gargle. Potassium chlorate, salicylic acid, iron, quinine, alcohol, are among the agents enumerated as of use.

Upon the treatment of diphtheria proper there are one hundred and twenty-five contributions, with eighteen more upon the abortive treatment, making one hundred and forty-two in all. This represents a great deal of futile activity; but fortunately science is helped by failures as well as success.

A notable feature in the various contributions is that, no matter what the agent recommended, it is almost always an extremely efficient one. The literature of the therapeutics of diphtheria is essentially constructive. Indeed it is too much so, and some judicious iconoclasm would be very useful.

It is generally thought that when a disease has many drugs which are almost its specific, the real specific is nature. But Dr. Kormann suggests that this does not represent the whole truth for diphtheria. That disease may be in some cases or localities very favorably influenced by a special remedy which is of less value at other times or places. However this may be, it is certain that no heterogeneity of remedial measures recommended will justify a physician in adopting an expectant plan of treatment in the disease in question.

And indeed, the diversity in modes of treatment is not fundamentally at all great.

We find that two authors recommend flowers of sulphur blown into the throat. Thirty-eight authors recommend the use of some disinfectant as the essential thing.

Twelve give especial prominence to potassium chlorate; five to the salts of iron; thirteen to mercury; four to local applications of chloral hydrate; four to alcohol and other stimulants; ten to the volatile oils and balsams (turpentine, eucalyptol, copaiva); twenty-six to pilocarpin; two to the application of digestive ferments.

There is the largest number of contributions, as well as the greatest weight of authority, in favor of some form of antiseptic and roborant treatment.

The disinfectants recommended most are carbolic, salicylic, and boracic acids. Permanganate of potassium, bromine, chlorine water, ozone, are also mentioned.

But whether disinfectants are recommended or not, chlorate of potash is the agent oftentimes referred to in treatment. The tincture of iron, so extensively used in America, receives less notice among the German writers.

The use of pilocarpin is fully discussed. On the whole, it seems to be a failure. No one has gotten the result first claimed for it. It is not a specific, and several cases of collapse resulting apparently from its use are reported.

The cases illustrating the action of the mercury salts (cyanide, bichloride, etc.) are in some cases striking, but are too few for a satisfactory conclusion to be drawn regarding them. The methods of treatment by inhalation of oxygen, the use of digestive juices, fluoric acid, lime-juice, chloral, the balsams, etc., as yet have proved little for themselves.

The abortive methods of treatment consist in the careful and complete removal of the first sign of diphtheritic exudation; the very frequent spraying of the throat with weak solutions of salicylic acid, boracic acid, or of brandy. The inhalation of steam with gargles of hot water, the local application of strong astringents, or of caustics, and the use of very large doses of alcohol, all of these various measures received about equal commendation.

It is apparent from a study of the foregoing that diphtheria has no specific, nor is it likely to get one until we find something which will cure all septic diseases. But there has been progress made in the therapeutics of the disease, and an intelligent physician can save many lives by judicious treatment.

INTESTINAL OBSTRUCTION OF TWENTY-ONE DAYS' STANDING RELIEVED BY CARBONIC-ACID-GAS INJECTIONS.—Dr. Heustis, of Mobile, reports this remarkable case in the Medical News of June 3d. It is of great practical interest.

After a tedious labor, attended by an extensive perineal laceration, and followed by puerperal fever lasting three weeks, a severe colic attacked the patient. Anodynes relieved the pain, and after this various cathartics were ineffectually given; likewise enemata. Obstinate emesis came on, and on the second day stercoraceous vomiting occurred. Dr. Heustis continues as follows:

Seeing that it was a case of ileus, calomel and opium were given regularly (calomel, two and a half grains; opium, one grain) every two hours; but the opium had to be increased to two and a half grains, and sometimes given every hour when the distress was great. Warm poultices were kept on the belly, and large injections of soap and water, or ox-gall and water were used every day. The opium appearing to be too slow in its effect, a grain of morphia was substituted, and a quarter of a grain of extract of belladonna, with the *two and a half grains of calomel*, which was kept up every two hours while awake. She would generally get a little sleep at night, but was hardly ever free from pain, and almost every day a large quantity of stercoraceous matter was vomited. Notwithstanding this, the expression of countenance remained good and the belly soft. Before the coming on of an attack of stercoraceous vomiting there would be a rumbling of the bowels; but instead of causing a desire to go to stool, there would be a reversed action and then the horrible vomiting.

No spot could be located as the seat of the obstruction; and though the same train of symptoms continued from day to day, the last resort of making an exploratory opening of the abdomen was postponed. Her dozen pills (of *thirty grains of calomel*, twelve of morphia, and three of belladonna extract) would last two or three days, sometimes not so long; but there was no appearance whatever of salivation.

On the seventeenth day it was determined to make an exploratory incision into the abdomen, but the gentlemen to assist could not be got together, and it was deferred until next day. Next morning her pulse and countenance were good, belly soft, free from any swelling; and the operation was deferred. Large injections containing ox-gall

were forced through an India-rubber tube, eighteen inches up the rectum and colon, with a stomach pump, but nothing but the injection would come away. Quantities of melted lard were tried in the same manner, with the same result.

Having read of carbonic acid gas succeeding in such cases, I had the husband get one of the large siphon bottles, sold as seltzer water, fasten the India-rubber tube tightly on the spout, and after oiling it well and passing it far up into the bowel, turn on the seltzer. He did so in my absence, and when I saw her in the morning she declared that the gas came out of her mouth; she was sure of it, for she tasted it distinctly. Still her bowels did not act, and she had another attack of stercoraceous vomiting next morning.

Her husband having got another quart bottle of seltzer, I attended to the administration of it, passing the tube about eighteen inches up the bowel before turning on the gas. It made a noise like escaping steam as it passed into the bowels, and before the bottle was half empty the feces began to flow out; and when the flow stopped, the gas was turned on again, to be interrupted by more feces; and so it was kept up until the bottle was empty, and the bowels, too, apparently, from the quantity passed.

After that her bowels acted every day, and she had no further trouble with them.

As the exact seat of the obstruction could not be ascertained, its cause remained doubtful. Possibly a band of adhesive lymph resulting from the recent attack of peritonitis might have pinched the bowel; but in such a case there would probably have been swelling and tension of the abdomen. In the absence of positive signs, it will be reasonable to assign a spasmodic contraction of the bowel as the cause; but why it should have continued so long, and not be relieved by such large quantities of morphia, is a mystery.

The elastic and pervading force of carbonic acid gas thrown far up into the colon would appear to be the readiest and best means of overcoming such obstructions.

ANTISEPTIC INCISION DRAINAGE IN EMPYEMA.—Mr. F. Richardson Cross, Surgeon to the Bristol Infirmary, concludes an article on Empyema, published in *British Medical Journal*, as follows:

Good drainage is the essential consideration in the treatment of empyema, but there is another side to the question scarcely less important—the prevention of putrefaction or of fetid decomposition in

the pleural contents. So long as pus is contained within its abscess-sac, it does not putrefy; but putrefaction is immediately brought about by contact of putrefactive agencies abundant in the outer world, or in the mucous tracts of the body immediately in communication with it. Pasteur's experiments show that the putrefactive elements are not the gases of the atmosphere, but solid particles floating in it, as well as abundantly present on the surface of the planet. Air itself would harm the pleura by physical or chemical contact, but its exclusion is a matter of very small importance, provided the vital putrefactive agents in it be excluded.

I should prefer to treat an empyema by absolute exclusion of air, if this could be satisfactorily combined with continuous drainage; but I do not think it practicable; for the granulation-tissue which must develop around a tube passed through the intercostal tissues secretes pus, and thus provides a putrescible channel between the pleural contents and the atmosphere; and if ulceration occur instead of granulation, the tube-tract in the chest-wall is no longer even air-tight. The difficulties in the way of emptying the pleura without admitting any thing to replace the discharging pus, and the doubtful usefulness of any form of traction to encourage the expansion of the lung, militate still further against prolonged aspiration or any form of continuous suction. On the other hand, atmospheric pressure in the pleura directly upon the lung does not seem to interfere with the ultimate expansion, and, provided the putrefactive agents be destroyed, the presence of air is scarcely prejudicial. I therefore submit that the most satisfactory way at present of treating empyema is by a free dependent opening into the pleura, with good drainage, under full Listerian precautions, which allows free and full escape of the pus, and admission into the pleura of an aseptic atmosphere until such time as the visceral and parietal pleuræ come into contact.

As to the sight for drainage, the most dependent part of the pleura, when the body is supine, is the tenth rib at its angle. An incision made along its upper border, just outside the angle, is as low in the chest as it is usually safe to go. The lower intercostal spaces are widest, and posteriorly more so than at the axilla, admitting a full-sized drainage-tube. The lower angle of the scapula rests on the eighth rib. I should incise just outside the angle of the rib, never above the eighth space; and if the effusion be very large, should prefer the tenth.

The drainage-tube requires careful management. If it be left in too long, the sinus can not close; and, even if the empyema be practically cured, the granulation-tissue along the tube secretes a good deal of pus. On the other hand, it should not be withdrawn too soon. In

one of my cases I thought it produced dyspnea, and unwisely withdrew it the second day after the operation, but reintroduced it two days afterward, with relief of a great deal of pus. On the seventh day after the operation, the empyema was replaced by a serous discharge, and I again discontinued the drain; the wound did not heal until seven weeks after the operation. Had I drained for a fortnight, I believe it would then have been cured in a third of the time.

ERGOT IN LABOR.—Dr. P. C. Williams, of Maryland, in a recent paper holds the following views in regard to the use of ergot. He believes that it will prevent abortion before the fourth month; that it will shorten labor and obviate exhaustion in the woman; that it will prevent diminution of the pains from chloroform; that it will prevent post-partum hemorrhage and septic absorption. Of one hundred and fifty-eight cases of labor treated upon the plan of shortening its duration and relieving pain by the employment of ergot and chloroform, and of forceps whenever there is unusual delay, he had lost no mothers and but three children. He believes that ergot is useless in labor except by hypodermic injection, and prefers the fluid extract to ergotine for this purpose. (Medical Record.)

TRACHELORAPHY, OR EMMET'S OPERATION.—Dr. W. S. Playfair recently read before the Obstetrical Society of London a paper on this subject, in which he referred to its comparative neglect in this country. He then described the cases for which it was suited and referred to their diagnosis. Subsequently, he referred briefly, to the mode of performing the operation, and to his own experience of it. Finally, he ended his paper as follows: "My own conclusions may be briefly summed up in the statement that, although there are a large number of cervical lacerations which produce no effect whatever, and, having healed, call for no treatment, there are a considerable number which give rise to much irritation to the uterus, which lead to important secondary results; and that these cases can often be rapidly and permanently cured by the operation for the introduction of which we owe Dr. Emmet a debt of gratitude, and with which his name will always be associated."

TREATMENT OF TONSILLITIS AND HYPERTROPHY OF THE TONSILS BY BICARBONATE OF SODA.—Dr. Armangué reports in *Révue de Thérapeutique* seven cases of tonsillitis cured in less than twenty-four hours by the bicarbonate of soda. This method of treatment was introduced by Dr. Giné, Professor of Clinical Surgery, who employed bicarbonate of soda locally either by insufflation, or directly applied by the finger of the patient. The applications should be frequently repeated until the disease disappears. Dr. Giné relates dozens of cases in which a cure was accomplished in twenty-four hours, and has never seen this method fail to produce a good effect. The alleviation is almost always immediate, and is never long delayed. Its efficacy is especially marked in the prodromic period of tonsillitis, when it will invariably abort the disease. According to Dr. Giné, bicarbonate of soda does not diminish the predisposition to anginas, but only arrests their development. Excision of the tonsils is a useless operation in cases of hypertrophy of the tonsils, since the hypertrophy can be rapidly removed by frequent applications of the salt of soda. (*L'Union Méd. du Canada*; Practitioner.)

SUBCARBONATE OF IRON IN INDOLENT ULCERS.—Dr. Vidal has for some months been experimenting with this substance in the St. Louis Hospital, Paris. It is prepared by precipitating a solution of ferrous sulphate (free from copper) by means of carbonate of sodium. The precipitate is washed and dried in the open air, and so loses carbonic acid while it absorbs oxygen. The result is a brown rouge-like powder. It has been applied to all kinds of ulcers and always with excellent effect. The surface is first washed with a mild astringent lotion, the powder is then spread over it in a fairly thick layer, and a bread-poultice is placed over all. The dressing is done twice a day. In the worst cases complete cicatrization has been obtained in thirty to forty days, in ordinary cases in ten. It is found that the local temperature rises considerably after the dressing, and that electric currents capable of demonstration with the galvanometer are set up around it. The dormant vitality of the granulations

is rapidly awakened, and cicatrizing islands may sometimes be seen in the middle of the already contracting ulcer. (*Le Praticien.*)

THE DESTRUCTION OF DIGESTIVE FERMENTS IN THE ALIMENTARY CANAL.—Of late years the use of digestive ferments has very considerably increased. It is not uncommon to give patients with weak or disordered digestion extracts containing pepsin or trypsin, in order to aid the conversion of proteids into peptones. But while this increase in the use of extracts containing ferment by physicians has been going on, little has been done by physiologists to add to our knowledge of the conditions under which the administration of these ferments may with confidence be regarded as profitable or profitless. Some of these conditions are pointed out by Mr. Langley, of Cambridge. He finds that those digestive ferments which are secreted in a neutral or alkaline fluid are rapidly destroyed by acids, and that those which are secreted in an acid medium are rapidly destroyed by alkaline salts. Thus the ferments of saliva and pancreatic juice are destroyed in the stomach, the ferments of the gastric juice are destroyed in the small intestine.

Hence it is very improbable that a pancreatic extract given with food aids digestion to any appreciable extent; the trypsin and other ferments contained in it are rendered ineffective before they reach the duodenum. By some a pancreatic extract containing zymogen (i.e. a substance capable of giving rise to ferment) is recommended as being preferable to one containing ferment; it is, however, as useless to give pancreatic zymogen as to give pancreatic ferment, since the zymogen is split up in the stomach and the resulting ferment then destroyed, and since further, supposing any zymogen did escape untouched from the stomach, it would remain as zymogen in the alkaline fluids of the small intestine, and so be incapable of aiding digestion by providing the appropriate ferment.

The rapidity with which the sugar-forming ferment of the salivary glands or pancreas is destroyed by the acid of the gas-

tric juice, shows that an extract of either of these glands can have very little effect upon starch in the stomach. The effect is indeed confined to a short period at the beginning of gastric digestion. We have reason to believe that for about three quarters of an hour after a meal there is no free hydrochloric acid in the contents of the stomach; probably the acid is neutralized by the alkaline constituents of the food and of the saliva. During this time the conversion of starch into sugar could go on. Since pepsin can not act in a neutral fluid and is destroyed in an alkaline one, pepsin extracts would perhaps be given to most advantage three quarters of an hour to an hour after a meal, at the time when free hydrochloric acid makes its appearance. (Journal of Physiology.)

ON THE TREATMENT OF EPILEPSY.—Kunze treated thirty-five patients suffering from epilepsy, with completely successful results in nine of them, by means of curare. The published cases show that complete recovery occurred in very severe cases of epilepsy, even when the disease had existed for years, and the intellectual faculties had become affected. Acting upon these results, Prof. Edlefsen has investigated anew the effects of treatment by curare in certain grave cases of epilepsy, since the effects of treatment whether by the bromides or by atropia are not so entirely satisfactory as to render all other methods superfluous. He employed the formula recommended by Kunze, filtering the solution before injecting it—Curare, 0.5 gram; aq. dest. 5.0 grams; acid. hydrochlor. gtt. 1; digere per xxiv horas, dein filtra. Of this solution one third is to be injected every five days; as a rule it neither causes much pain nor any noticeable reflex symptoms; in no case did it cause any toxic phenomena; still it is necessary to ascertain the trustworthiness of the preparation of curare before employing it. Two cases of hystero-epilepsy were not benefited by this treatment, while of thirteen cases of true epilepsy, the majority described as severe cases of old standing, six were not permanently improved, while three were completely, and up to the present, permanently cured.

Three other cases, although not cured, were distinctly improved, the attacks being interrupted for several months. One case is still under observation, and promises to be successful. Prof. Kunze recommends that the treatment be given up if there are no signs of improvement after the fourth or fifth injection.

Dr. G. Ferraud sums up the recent results of treatment with bromide of potassium at the Salpêtrière (Paris). The cases of eighty-nine female patients are analyzed as follows: Thirteen per cent very greatly benefited; fifty-seven benefited; eighteen slightly benefited; twelve not benefited. Minimum daily doses of 5 to 6 grams for women and 6 to 8 for men are recommended. Legrand du Saulle continues to give the salt on six days of the week for the first three months after the fits have ceased for a year, and afterward on three successive days in each week. Arsenic is found useful in the acne produced by the bromide, and to avoid serious weakening of the memory coffee is ordered for all patients whose daily dose is more than seven grams. (*Neurologisches Centralblatt*.)

SPIDERS' WEBS AS A REMEDY IN AGUE.—This old remedy seems again to be coming to the front. In the *Gaceta Medica*, of Seville, there is an article upon the subject, and also in the *Correspondencia Medica*. In the latter journal ninety-three cases are mentioned, and Dr. Oliva gives twenty-six more in the *Gaceta Medica*. Of these, twenty-two were cured with the powdered web, two with the tincture and the powder, and the remainder with the tincture alone. The web is prepared in the following manner: It is gathered with great care, and is shaken to remove the dust, washed, dried in the sun, and powdered. The powder thus obtained is of a dark ash color, without smell or taste, insoluble in water, and very slightly soluble in alcohol. From examination of the one hundred and nineteen cases which have hitherto been published, Dr. Oliva draws the following conclusions: 1. Arachnidina (cobweb) possesses the power of curing malarial fevers, and always when they are of a quotidian and tertiary type. 2. That when administered in the

dose of two grams to adults, or one to children, it generally stops the illness at the second fit. 3. Its action is less prompt than that of sulphate of quinine; for this reason, until we get more data regarding the medicine, it should not be employed in pernicious intermittents. 4. That in consequence of its tastelessness it is more easy to administer than quinine, especially to children. 5. That its use lessens the tendency to relapses. (Practitioner; *La Independencia Medica, Mexico*.)

WILLOW-LEAVES IN INTERMITTENT FEVERS.—Surgeon Chetan Shah, when in Cabul in 187-78, found that quinine disagreed with the poorer Cabulis and Hazaras. Large doses brought on vomiting, small doses dysentery. He was led to fall back on a water distilled from the leaves of *Salix babylonica* (weeping willow) and *Salix egyptiaca*, an ancient remedy still largely prescribed by the *hakims* of India and Afghanistan. This water or the diluted juice of the leaves rarely failed as a febrifuge, and was free from irritating properties. An extensive experience has made him prefer this remedy in cases where the alimentary canal is irritable, and in intermittent fevers of long standing. (Indian Med. Gazette.)

SPONGE-GRAFTING.—Dr. Hayle, Cornwall, England, reports two cases where this procedure was attended by good success. In the first case the side of the finger had been shaved off by a plane; in the second there was loss of substance of a penis subsequent to an operation. In each case fine Turkey sponge was applied to a healthy granulated surface, followed by firm adhesion in four days; gentle traction then causing much pain, and the sponge could not be detached without lacerating the tissues. In three weeks a thin blue surface of new tissue covered the edges of the sponge. In both cases the sponge was permeated by blood-vessels by the fourth day. The object of grafting was, in the first case, to restore shape to the finger, and the second to prevent the awkward results of cicatricial contraction in the penis.

Notes and Queries.

JOHN BROWN, M.D., LL.D.—John Brown, the genial, the gentle, the generous, and the good, he of "sweetest speech and pity vast as heaven," has entered on that

"Sinless, stirless rest—
That change which never changes."

He caught cold early in May, and died with pneumonia a few days after at his home in Edinburgh. The following appreciative sketch of a character which was one of the most beautiful ever known among men we copy from the Edinburgh Medical Journal:

While he devoted his leisure hours to that general culture which has always distinguished the best physicians, he gave his strength to his professional work. The bent of his mind was such that he sympathized with the great physicians of all times, and he has shown an appreciation of the character of many famous men whose works are now apt to be forgotten amid the important discoveries of this age.

There would seem to be two ways of acquiring that knowledge and skill which a successful medical man must have—one by the external study, observation, and experiment which an intelligent, not necessarily human being might make on men in health and in disease, without any sympathy or sense of community with them; the other, from the inside, which only a *man* can exercise, in which, by loving sympathy and by close and accurate observation of the indications which he, from his community of nature with those whose cases he observes, can interpret, he attains a power of judgment which appears almost intuitive, and which, from its very nature, is incapable of statement in logical form.

We all recognize this power of judgment in moral matters; but it exists in medical matters too, and its possession makes the difference between the sagacious physician and the scientific pathologist. The methods of both must be employed, and Dr. Brown did not despise or neglect the scientific side of medicine, though to him medicine was

practically the healing art. In one of his writings, when addressing young medical men, he says, "Give more attention to steady common observation, the old Hippocratic ἀκριβεια, exactness, literal accuracy, precision, nicety of sense; what Sydenham calls the natural history of disease. *Symptoms* are universally available; they are the voice of nature. *Signs*, by which I mean more artificial and refined means of scrutiny—the stethoscope, the microscope, etc.—are not always within the power of every man, and, with all their help, are additions, not substitutes. Besides, the best natural and unassisted observer—the man bred in the constant practice of keen, discriminating insight—is the best man for all instrumental niceties." What he advised his young medical friends to be, he was. But how can we tell what he was? how describe his simple yet infinitely complex character? If we may attempt its analysis, we would say that its fundamental principle was a perfect and loyal devotion to truth; not that coarse truth which is merely the negation of lying, but the pure, essential truth which the seeing eye can somewhat perceive as pervading all the works of God, and the image of which is the only thing of any value in man. And as love was the source and spring of all his power, so this love of truth gave him that instinctive sense of the beautiful in art and literature which made him so excellent a critic—clear and certain, but also kindly and considerate. If he had to review an opinion, or an essay, or a picture, he did not begin, as most of us do, with the points to which he objected. If there were any thing good in it he began there. He did not spare the errors and faults, but treated them in a manner so friendly as to rob criticism of the bitterness which we are apt to think is of its essence. There was one exception: conscious, intentional, deliberate falsehood he hated with a perfect hatred, and it could rarely evade his keen and pure eye. But vengeance was not his, and where he could not bless he was mostly silent.

Most men in their intercourse with their fellows use certain current phrases, useful counters of speech which mean something or nothing, as the case may be, which we keep in our pocket and hand out one or two, as occasion seems to require. He had none of these. His commonest remark to the porter who took his portmanteau at the station, or to the cabman who drove him home, to every one, high or low, with whom he came in contact, was fresh and original, made there and then, fitted to the occasion, and felt like a breath of fresh air. All natural and unaffected human beings were at once at home with him, and even the most artificial prigs gradually thawed in his presence.

In private life Dr. Brown was one of the most amiable and lovable

of men. There was a charm in his manner and conversation which is quite indescribable, and there was also a singular balance in all his faculties, which precluded extremes and never suffered degeneration into corrupt forms. He had humor in a very high degree, but it never for a moment merged into buffoonery. He had sense and wisdom of a rare kind, but they never became severe or overbearing. He was full of pleasant fancy, but it never interfered with his great practical insight and skill. He held decided views in theology, in politics, and in medicine; but he was, at the same time, perfectly tolerant of views opposed to his own, and ever ready to recognize the importance of diversities in human opinion. He had a remarkably clear insight into character; but though the weaknesses, follies, or vices of those with whom he came in contact seldom escaped him, he never seemed to be touched by any sourness toward his fellow-men. The only things of which he was impatient were pretentiousness, quackery, or falseness. Above all, he never showed any vanity; and while always ready to recognize good in others, he was very diffident of himself, forbearing, and humble. In particular, it may be remarked that he was a sincere, humble, and devout Christian. His religion was not a thing that could be put off or on, or be mislaid or lost; it was *in* him, and he could no more leave it behind than he could leave his body behind. It was in him a well of living water, not for himself so much as for all around him. And his purity, truth, goodness, and Christ-like character were never more clearly seen than in those periods of darkness when they were hidden from his own sight. He very seldom spoke expressly of religion. He held "that the greater and the better, the inner part of a man, is and should be private—much of it more than private;" but he could not speak of any thing without manifesting what manner of man he was, and his ideas on religion can be imperfectly, no doubt, but so far truly, gathered from his writings.

It is sad to think that his well-known figure and his calm, meditative gait, his intellectual, benignant, and, in old age, really beautiful countenance, with a smile of recognition for all, children and dumb animals as well, shall no longer meet our eye on the streets of Edinburgh. *Abiit ad plures*. He has gone over to the majority. While earth is poorer, heaven is all the richer; for we may safely say, if ever a member of our noble profession manifested the Master's spirit in his daily life, it was the good and gentle brother whom we now deplore.

ANOTHER CURE FOR ECZEMA.—Animal charcoal freshly prepared and used as an ointment on the eruption is a specific for

eczema. So says Onocool Chunder Chatterjee, of India. That this remedy is a specific, is unlikely, and that it is of marked value is improbable; but Dr. O. C. C.'s name is worth remembering.

THE UNIVERSITY OF LOUISVILLE.—The trustees of this institution have recently made some very important changes in its Medical Department. A chair entitled *State Medicine and Sanitary Science* has been created, and the venerable Prof. Bell, who has so long and so ably taught the *Science and Art of Medicine*, has been transferred to the new chair. Prof. L. P. Yandell, so well known in connection with Clinical Medicine in the institution, will succeed to Prof. Bell's former chair. Prof. Holland, who for some years past has lectured on *Nervous Diseases, Materia Medica and Therapeutics, and Medical Chemistry*, will now lecture on *Pathology, Clinical Medicine, and Nervous Diseases*, while Medical Chemistry will be taught by laboratory demonstrations alone, a work which will be intrusted to Dr. Cottell, who has long practical experience in this branch of the curriculum. The chair of *Materia Medica and Therapeutics and Clinical Medicine* will be filled by Dr. Jno. A. Ochterlony, for many years Professor of the *Theory and Practice of Medicine* in the Kentucky School of Medicine, and recently Dean of that college. Dr. W. O. Roberts, who served as Adjunct to the Chair of Surgery during last winter, proved so acceptable a teacher that on recommendation of the faculty the trustees revived the Chair of *Surgical Pathology and Operative Surgery*, made vacant by the death of Prof. Cowling, and assigned it to Dr. Roberts. The anatomical department has been given additional interest through the appointment of Dr. L. S. McMurtry as one of the demonstrators of Anatomy—Dr. Gilbert, the present popular incumbent, still retaining his position. To accept this place Dr. McMurtry resigned the Professorship of Descriptive Anatomy in the Kentucky School of Medicine, where it is understood he proved himself an attractive teacher during the past winter.

The faculty share with the trustees the opinion that the sev-

eral changes just made in the teaching corps of the Medical Department will materially add to the strength, efficiency, and attractiveness of the institution. Prof. Ochterlony is an experienced teacher and of enviable fame as a writer. The readers of the AMERICAN PRACTITIONER will recognize in the name of Dr. McMurtry one of its most scholarly contributors. Such members of the faculty as have been transferred to other chairs need no special mention at our hands.

The Medical Department of the University of Louisville has long been recognized as one of the leading schools in America; and possessing every needful facility for imparting a thorough medical education, it can not fail to preserve its place.

COD-LIVER OIL.—The London Medical Times copies the following from the *Gaz. des Hop.*: Dr. Fonssagrives recommends the following formula: Cod-liver oil, ninety-six grams; iodoform, twenty centigrams; essence of anise, four drops. The addition of the last two articles completely masks the taste and smell of the oil. Patients to whom the preparation is still repugnant may add to each spoonful of oil a very small quantity of salt, which modifies its taste and facilitates its digestion. [Which combination reminds one of the following recipe for disguising the smell of onions on the breath: Eat garlic.—ED. PRAC.]